Thames Water Customer Voices

PR24 Enhancement Area Deep Dives - Summary overview

An analysis of customer views and expectations of Thames Water across eight enhancement area deep dives, January – March 2022

Report prepared by Verve

Background and methodology

Background and methodology (1)

Setting the scene for the PR24 Deep Dives

- Thames Water has begun its PR24 engagement programme, through which it aims to understand how customers (and communities and stakeholders) feel about proposed elements of its Business Plan for 2025-2030
- Foundational research was completed in October 2021 and this discussed in high-level detail what customers want from Thames Water and what their core expectations are
- This is the next phase of PR24 customer research, to gather in-depth 'deep dive' feedback on enhancement area investment proposals in 8 specific areas:
    1. Net Zero
    2. Trunk mains replacement
    3. Replumbing London
    4. Waste system headroom
    5. River spills
    6. Bathing water
    7. Sustainable abstraction
    8. Lead pipes
- At the time of the research there had been ongoing (over a year) national and local media coverage of sewage overflows into rivers, and recent national news on annual water bill increases. These events may have given heightened awareness and concern with these issues.

Background and methodology (2)

How we approached these 8 topics

- This report is a summary of the main findings from all eight deep dive topics. In some cases, topics are combined as follows, to reflect how they were tackled in the research:
    1. Net Zero (single topic), four day online community (12-17th January 2022)
    2. Trunk Mains and Replumb London (two topics), four online day community (24-27th January 2022)
    3. Waste Headroom, River Spills and Bathing Water (three topics), four day online community (7-10th February 2022)
    4. Sustainable Abstraction (one topic), three day online community (22-24th February 2022)
    5. Lead Pipes (one topic), two day online community (16-17th February 2022)
- For each of the five online communities we gathered a broadly representative sample of around 40 Thames Water customers, 5 future customers (non bill payers aged 18-24) and 5 business customers
- Over the course of each community customers were presented with carefully developed materials that described the issues under scrutiny, the challenges Thames Water faces in these areas and the investment propositions for tackling the challenges
- Customers had the opportunity to respond within the communities, with initial uninformed reactions to each issue, then increasingly informed reactions as we presented them with more material
- This approach meant that customers were able to provide us with considered views on the investment proposals (including potential bill impacts in many cases), and select their preferred options for investment
- At the close of each community, customers were asked to rank each of the eight topics in order of priority by which Thames Water should be making improvements, although it's important to remember that they would have just been focussing on one, two or three topics in isolation, with only a sentence to assess the other topics
- Full, detailed reports on each of these deep dive topics are available separately. Research materials are appended to this report.

Verve's declaration that this research observes Ofwat's standards for high quality research (1)

Ofwat's minimum standards for high quality research	How we met these standards
Useful and contextualised	This research was used to inform the development of Thames Water's investment plans for the period 2025-2030 and ensure that these align with customers' expectations. The enhancement cases were developed from previous customer insight and so this research falls into a wider body of insight gathering aimed to understand what customers want from Thames Water in the near and longer term.
Neutrally designed	Customers were presented with historical context and other fact-based background details on each of the areas, likely future projections on how improvements to issues could be achieved, and how that might impact them, wider society and their bills. Comparative information on other company's performance in these areas was not used, as it was felt that there was already a lot of information for customers to read through, explaining why the different improvements might be required. Questions and stimulus were designed to be straightforward, using plain English. A small number of Verve team members not associated with the project fed back informally on survey comprehension as it was being developed.
Fit for purpose	We used a qualitative deliberative methodology to fully meet the objectives of this research. Customers were provided with background and context over the course of the research to allow them to provide spontaneous views as well as more informed views once they'd had time to digest the issues and proposals. The online community approach we used enabled individuals to take part that may not have normally had the time to attend focus groups or workshops (in-person methods that Thames Water used a lot for its PR19 customer research). The online community method also allowed customers to express themselves individually and more freely without the social pressure of a focus group/workshop scenario. Comprehension of some of the complex topics discussed was also helped because participants could view and review stimulus material at their own pace, allowing them time to digest and reflect on information, without the pressure to answer immediately. We ensured that questions and stimulus used plain English for maximum comprehension. We did not feel this research was complex enough to require piloting before the fieldwork started, but as the online community allows our researchers to individually moderate each participant, if there was any misunderstanding of the research activities then there was an opportunity to clarify things.

Verve's declaration that this research observes Ofwat's standards for high quality research (2)

Ofwat's minimum standards for high quality research	How we met these standards
Inclusive	We spoke to a broadly representative group of customers, including household, non household, vulnerable and future customers. A full breakdown of the sample and how it met Thames Water's customer segment quotas can be found elsewhere in this report. The online methodology used allowed individuals to have a voice where other methods may have restricted this. For instance, those that work full time, have family commitments, certain disabilities, financial issues or language barriers might find it difficult to participate in other research methodologies. With the exception of not being able to reach people with limited or no access to the internet, online methodologies work well to attract involvement from a good cross section of Thames Water's customer base.
Continual	Thames Water's research and engagement programme is continuous. The findings from this research will be used in conjunction with previous and future insights to inform Thames Water's day-to-day service delivery (e.g. to improve customer satisfaction), business plan and long-term delivery strategies.
Independently assured	Thames Water's research and engagement programme and line of sight process will be reviewed by an independent expert assurance partner as part of PR24 assurance.
Shared in full with others	Thames Water are planning to share research reports, including this one, with other water companies and with the general public.
Ethical	Verve is a member of and abides by the code of conduct of the Market Research Society.

Combined sample for all eight deep dives

This research was designed to capture the diversity of Thames Water's customer base

Customer Groups	Count
Thames Water Customer Voices panel	197
Future customers (recruited externally)	17
Business customers (recruited externally)	18

- 232 customers completed the research
- Specific demographics that we collected from participants closely matched that of the Thames Water customer base*
- **Customer Voices -** Thames Water's online research community of over 1,000 household customers, designed to be representative of all customers. It was formed in June 2021 using Panelbase as a recruitment source, with a small number of customers signing up via Thames Water's website and social media posts.
- **Future customers (18-24 year olds, non-bill payers) -** Recruited via Total Focus Qual Recruitment. Views from this cohort were sought given that decisions made now will impact on their future, both in terms of service delivery and impacts of climate change
- **Business customers –** Recruited via Total Focus Qual Recruitment. Views from this cohort were sought, because even though they don't pay bills directly to Thames Water, their water and wastewater service is still provided directly by Thames Water (and hence impacts their bill)

** 'Customer research and sampling approach September 2018' document, supplied by Thames Water*

*** Those declaring a personal vulnerability*

Customer Voices (197)

Demographics	No.
Gender	
Male	96
Female	101
Age	
18-24	2
25-34	44
35-44	47
45-54	43
55-64	34
65+	27
Social grades	
ABC1	127
C2DE	70
Ethnicity	
White	125
BAME	69

Demographics	No.
Vulnerability status	
Non-vulnerable	166
Vulnerable**	31
Region	
London	108
Other	89
Service type	
Clean & Waste	163
Waste only	34

Business customers (18)

Demographics	No.
Number of employees	
0-9	8
10-49	6
50+	4
Service type	
Water reliant	11
Non-water reliant	7

Future customers (17)

Demographics	No.
Gender	
Male	9
Female	8
Social grades	
ABC1	15
C2DE	2
Ethnicity	
White	8
BAME	9
Service type	
Clean & Waste	13
Waste only	4

Detailed breakdown of sample against customer base (1)

Gender, age, SEG, vulnerability and ethnicity

Demographic	Customers taking part	Customer base/ target
Male	96	97
Female	101	100
18-24	2	29
25-34	44	41
35-44	47	37
45-54	43	33
55-64	34	24
65+	27	31
ABC1	127	122
C2DE	70	74
Non-vulnerable	166	169
Vulnerable	31	28
Vulnerable breakdown		
Mobility disability,	12	n/a
Chronic illness,	8	
Mental health condition,	3	
Mobility disability and Chronic illness	3	
Hearing disability,	2	
Autism Spectrum Condition	1	
Visual disability and Mobility disability	1	
Not stated	1	

Demographic	Customers taking part	Customer base/ target
White British	125	146
BAME	69	51
BAME breakdown		
White European	2	n/a
White and Asian	7	
White and Black African	1	
Black African	6	
Black British	4	
Black Caribbean	6	
Indian	15	
Pakistani	2	
Chinese	2	
Latino	1	
European (not specified)	15	
Other Asian	2	
Other (not specified)	6	

Customer base/target – based on Thames Water's 'Customer research and sampling approach September 2018'

Detailed breakdown of sample against customer base (2)

Clean/Waste status and regional location

Demographic	Customers taking part	Customer base/ target
Clean & Waste	163	121
Waste only	34	76
London	108	94
London breakdown		
North East London	3	n/a
North West London	22	
South East London	34	
South West London	23	
Central North London	19	
Central South London	7	
Other regions	89	103
Other regions breakdown		
Central Bedfordshire, Buckinghamshire, Slough, Luton	25	n/a
Hertfordshire	11	
Lee Valley	30	
Oxfordshire, Swindon, Wiltshire, Gloucstershire, Warwickshire	7	
Surrey	6	
Maidenhead, Hampshire, West Sussex	10	

This would be the natural split of clean & waste and waste only customers, however, as three of the five communities excluded waste only customers (the water related topics: trunk mains & replumb London, lead pipes and sustainable abstraction), this is why the number of waste only customers taking part was lower than the natural target

This would be the natural split of London and other regions, however, as above, the exclusion of waste only customers for the water related topics had an impact on the number of customers taking part being slightly more skewed towards London

Customer base/target – based on Thames Water's 'Customer research and sampling approach September 2018'

Overall observations on what we heard from customers and common findings

Customers are broadly supportive of Thames Water's plans to make improvements to infrastructure and help protect the environment

- Across all of the topic areas, customers are generally supportive of Thames Water's desire to make improvements to infrastructure, help protect the health of customers and improve the environment.
    - While many of the issues presented to customers are already known to them (such as leakage), there are areas where considerable education was required, for example:
        - The issue of lead pipes and the potential harm that lead in water cause.
        - The reasons for sewer overflows, spills and floods into homes and rivers.
- Improvements in all the areas proposed are desired by customers, although there are frequently caveats, based around:
    - Bill impacts: it was clear that bill impacts would not be tolerated by all and in some cases customers show concern for those on lower incomes. Where a bill impact was not shown, customers caveat that they would want sight of this before giving confirmed support.
    - The number of people that an investment will benefit: not all initiatives would benefit all customers equally (such as bathing water for those that don't go wild swimming); there is less support in these cases – customers tend to be more likely to be supportive when an initiative will benefit the greatest number of people (for example increased sewer headroom).
    - The extent to which an initiative can guarantee results: for example, sustainable abstraction, where customers would like to see a degree of certainty that investment will deliver results.
- Overall, when customers prioritise initiatives, greater support is given for core service delivery initiatives (water mains and the sewerage network), where other initiatives such as sustainable abstraction and bathing water are lower down on their list of priorities.

Summary findings from each deep dive

1 **Net Zero**

2 Trunk Mains/ Replumb London

3 Waste Headroom, River Spills and Bathing Water

4 Sustainable Abstraction

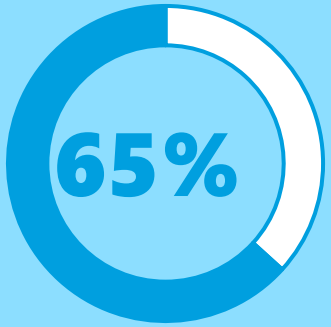
5 Lead Pipes

Net Zero: Customers recognise the importance of Net Zero and support Thames Water's plan and initiatives to get there

- Responding to the key research questions
- What do customers think about Thames Water aiming to achieve Net Zero operational carbon emissions by 2030, and being totally carbon negative by 2050? Is this the right pace?
  - Customers feel that an organisation of Thames Water's stature has a responsibility to 'lead the way' with environmental initiatives as long as it does not impede water quality or Thames Water services.
  - Thames Water's progress to date and overarching goal of being carbon negative by 2050 impresses a number of customers.
  - Many customers understand and accept Thames Water's rationale to:
    - Prioritise operational emissions;
    - Hit operational Net Zero by 2030
  - This is because many customers believe hitting operational Net Zero by 2030 allows Thames Water to focus on quick, easy and effective wins before applying more focus to the harder to solve embedded emissions.
- Is there support for the methods Thames Water will need to employ to achieve this, and the balance of methods used?
  - There is broad overall support for the methods employed, with 'Carbon offsetting' the least well supported.

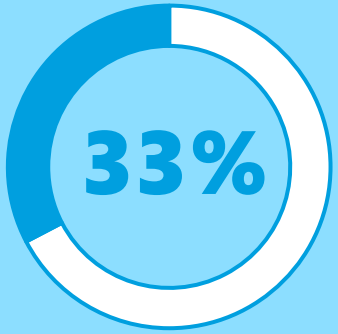
Net Zero: Broadly speaking, customers support Thames Water's plan for reaching operational Net Zero by 2030

31 customers strongly support this plan



- Customers strongly support the plan because they believe that a £7.50 cost (per billpayer) over 5 years is reasonable because it maximises the chances that Net Zero will be achieved, and a climate crisis avoided

16 customers somewhat support this plan



- Customers who somewhat support the plan still support the overarching Net Zero goal and methods to achieve this, but they have questions:
- How will Thames Water tackle embedded emissions?
- How much is Thames Water contributing from their profits?
- Can we have assurance that offsetting won't be used as a short cut?

1 customer somewhat opposes this plan

- The rejector of the plan felt it would, over the long term, save Thames Water money. Due to there being no mentions of eventual bill reduction they could not support the plan

Note: In terms of annual bill impacts for this, customers had been focusing on the topic of this deep dive, although they were reminded that there may be other initiatives that Thames Water need to tackle in the future which might also impact the bill

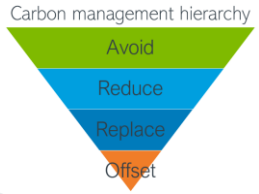
Caution, the percentages on this page are based on a relatively small qualitative sample size, they are shown to indicate direction of sentiment only

Net Zero: Customers also broadly support the methods used to achieve Net Zero

- **'Carbon offsetting'** and **'Turning sewage into products such as ammonia & phosphorus'** cause most concerns
- Some question if these are an effective way of reaching Net Zero
- Some question if these initiatives primarily benefit Thames Water at the expense of customer bills

- **'Switching from fossil fuels to heat pumps', 'Switching to electric/low-carbon vehicles'** and **'Capturing $C0_2$ for use by other industries'** are supported by many
- Many see these as imperative to Net Zero as a society but ask if the inevitable use of new technology will lower bills in the long term

- **'Capturing and refining green gas from sewage'** has very high support because of its large impact on Net Zero. Many are surprised (and delighted) that this would cost them 90p per year
- **'Getting supply chain to Net Zero'** is also very popular because it doesn't effect customer bills and encourages other businesses to reach Net Zero



Moderate support | High support | Very high support

1

Net Zero

2

Trunk Mains/ Replumb London

3

Waste Headroom, River Spills and Bathing Water

4

Sustainable Abstraction

5

Lead Pipes

Trunk Mains: There is unanimous support for the proactive replacement of trunk mains, with the majority of customers supporting a 'high' increase in the rate of replacement

- Responding to the key research questions
- What approach do customers support for managing trunk mains across the network and specifically do customers support Thames Water's proposal to begin a programme of replacing Thames Water's Trunk mains, focusing first on the 10% most at risk of bursting?
  - Given the potentially catastrophic impact of a trunk mains burst, this further reinforces customer views that action needs to be taken to prevent future leakage and bursts.
    - 'Prevention rather than cure' is favoured by many customers.
    - Although any programme of work needs to be undertaken carefully and smartly (for example through better monitoring), to minimise impact on costs and disruption for customers.
  - There is unanimous support for beginning a proactive programme of trunk mains replacement, with two in three customers supportive of a 'high' increase in replacement.

Replumb London: There is also unanimous support for the proactive replacement of distribution mains, with an even greater number of customers supporting a 'high' increase

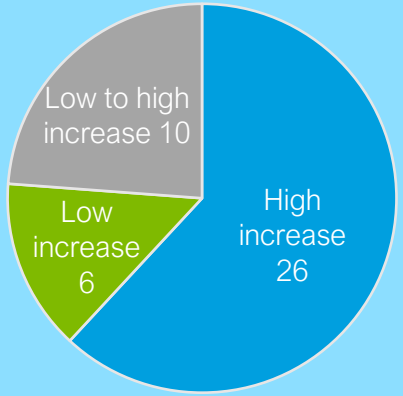
- Responding to the key research questions
- What approach do customers support for managing distribution pipes across the network and specifically do customers support Thames Water's proposal to change the approach to managing the network from one of maintenance to incremental replacement?
  - High leakage rates create concern about the condition of distribution pipes, though few customers have experience of prolonged or severe leakage problems where they live.
    - Given the information provided on current approaches to minimising leakage, and the accompanying minimisation of costs and disruption, there's a sense that Thames Water is 'doing the best it can under the circumstances'.
    - But this does underline the need to take steps to make considerable improvements.
  - There is unanimous support for beginning a proactive programme of distribution mains replacement, with almost three quarters supportive of a 'high' increase in replacement.
- Customers were broadly split on whether to prioritise trunk mains, distribution pipes or both equally.
  - Prioritising trunk mains is favoured as it can avoid catastrophic impacts and may have a greater impact on leakage overall.
  - Prioritising distribution pipes feels like it will deliver a greater overall impact for most customers, as well as being cheaper and easier to fix.

Trunk Mains/Replumb London: There is almost unanimous support for proactive replacement of both trunk mains and distribution pipes

Trunk mains

Support for a change in approach to more proactive trunk main replacement

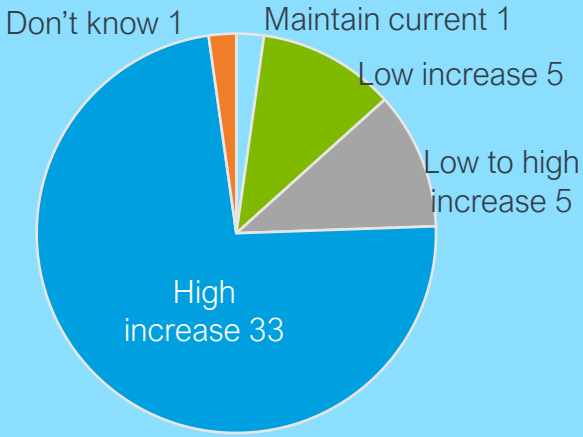
Preferred size of increase in proactive replacement*



Distribution pipes

Support for a change in approach to more proactive distribution main replacement

Preferred size of increase in proactive replacement*



* Numbers in these charts = number of respondents

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1 Net Zero

2 Trunk Mains/ Replumb London

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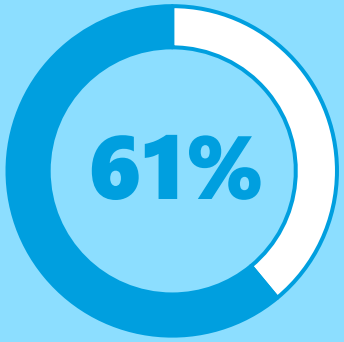
Waste Headroom: Customers support plans to increase the sewer network capacity, although many caveat they are not able to fully commit without seeing potential bill impacts

- Responding to the key research questions
- Is there support for upgrading the sewer network capacity to reduce the number of households and businesses at risk of sewer flooding, and the methods used to achieve this?
  - Three in five would like to see sewer flooding in or near properties prioritised, compared with one in four preferring river spills to be prioritised.
  - Around half preferred a midway approach to reducing the risk of sewer flooding – between halving the risk for 150 homes and eliminating the risk for 50 homes.
  - Customers support the proposed methods Thames Water plans to use to reduce sewer flooding between now and 2030, they see the benefits of both ‘green’ (natural) and ‘grey’ (constructed) solutions and believe a mix of the two is best.

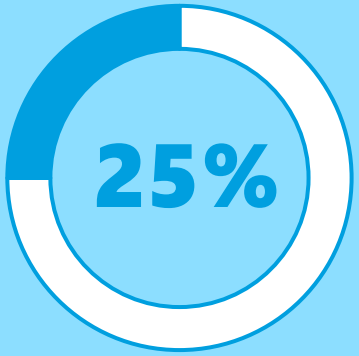
Waste Headroom: Customers believe Thames Water should address all sewer flooding incidents, yet they prioritise addressing sewer flooding into/near properties first

31 customers prioritise sewer flooding's into/near properties



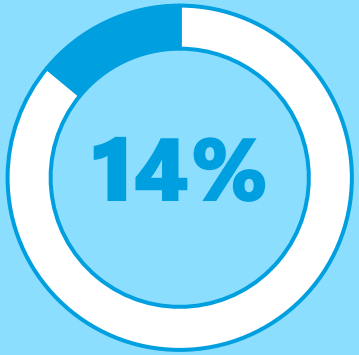
- Many customers believe it is imperative to prioritise reducing sewer flooding into/near properties because this has the biggest impact on customers (e.g. impact on wellbeing, direct damage of personal possessions and properties)
- Disgust is a strong emotion, elicited by the idea of foul smells and imagery of sewage water in homes

13 customers prioritise sewer spills into rivers



- Many customers see their local waterways as essential to their health and mental wellbeing, and so, are personally invested in protecting them
- They are also concerned that by damaging the rivers, local wildlife will be affected and that these local hubs may be ruined

7 customer prioritise surface water flooding



- These customers believe surface flooding has a low but recurrent impact on people's everyday life
- This minority believe that surface flooding is a contributor to both sewer flooding into properties and sewer spills into rivers and therefore needs to be addressed first

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River Spills: Customers broadly understand the reasons for river spills once the overflow mechanisms are explained, but are keen to see them eradicated completely by 2030

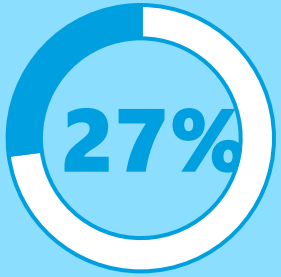
- Responding to the key research questions
- What are customers' attitudes to Thames Water's ambition to reducing river spills to zero by 2050?
  - Many customers agree with Thames Water's overarching goal to achieve zero spills by 2050 and the methods to get there between 2020-2025 and 2025-2030.
  - Some express disappointment that the Tideway Tunnel would still spill though, feeling this is incompatible with the 'zero sewage spills' aim.
- How quickly should Thames Water reduce river spills (if at all)?
  - A clear majority of customers favour a 100% reduction in spills even earlier, by 2030, at what they consider to be an acceptable bill impact.

River Spills: Many customers favour 100% reduction of river spills by 2030 believing approx £1 a month would go unnoticed by most

35 customers supported '100% less sewage spills into rivers' by 2030 (£10.90 a year on bills)

- Many customers support this option because they feel that for approximately £1 per month, natural habitats that benefit local communities across the Thames Water region would be free of sewage

15 customers supported '50% less sewage spills into rivers' by 2030 (£4.50 a year on bills)



- Other customers thought that a 50% reduction between 2025 and 2030 still represented excellent progress
- They believe that given the economic situation, this is the fairest option for all

3 customers supported 75% less sewage spills into rivers' by 2030 (£7.30 a year on bills)

- The 3 customers who preferred a 75% reduction think this sets a high and admirable target for Thames Water to strive towards at minimal cost to the customer

2 customers supported '25% less sewage spills into rivers' by 2030 (£1.80 a year on bills)

- The customers who preferred a 25% reduction felt that the funding was better spent elsewhere due to the relatively low environmental improvement (considering other forms of pollution)

Note: In terms of annual bill impacts for these options, customers will have been focusing on the topic of this deep dive, although they were reminded that there may be other initiatives that Thames Water need to tackle in the future which might also impact the bill. The customers who didn't prefer 100% reduction showed greater appreciation of river spills within the wider context that there may be other Thames Water initiatives in need of funding

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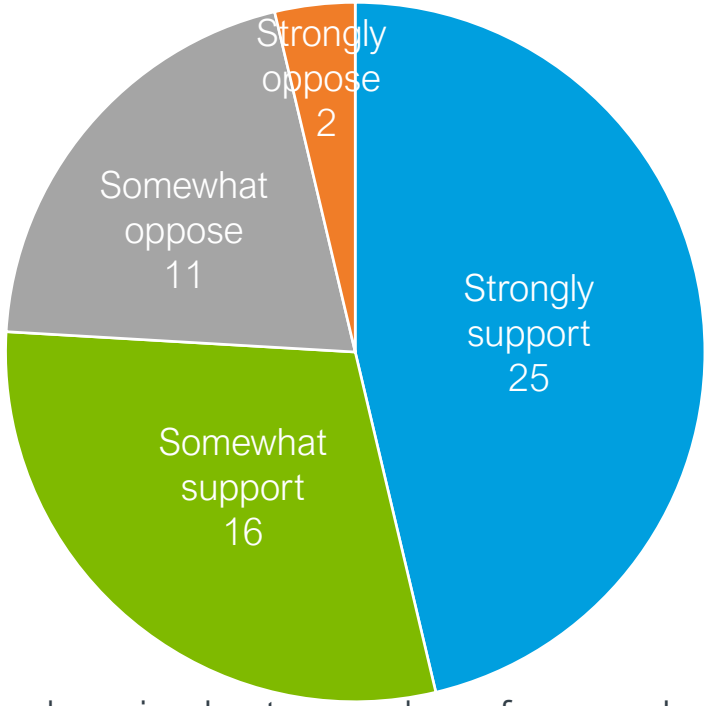
Bathing Water: Only a minority of customers go wild swimming in the Thames region, but many can see the benefits of a designated stretch of the Thames for bathing

- Responding to the key research questions
- What are customers' attitudes towards swimming in rivers (in the Thames Water area)?
  - A small number of customers claim to go swimming in lakes and rivers in the Thames Water area; some have friends and family that do so.
  - Many customers will not swim in lakes or rivers because they believe the Thames in particular is badly polluted and are afraid of risks to health.
- Is there any support for investment to ensure stretches of river are designated to bathing water standard?
  - Three in four customers are supportive of the creation of a designated stretch of river for swimming within the Thames Water region, in the period 2025-2030. The remainder are in opposition, largely due to the cost of what is seen to be a niche hobby, that many will not benefit from using.

Bathing Water: Three in four customers support the creation of a stretch of designated bathing water in the Thames Water region in the 2025-2030 period

To what extent do you support or oppose Thames Water investing in the creation of one designated bathing water (safe for swimming) stretch of river in the Thames Water region during 2025-2030, with a 15p impact on all customer annual bills?



Numbers in chart = number of respondents

Note: In terms of annual bill impacts for this, customers had been focusing on the topic of this deep dive, although they were reminded that there may be other initiatives that Thames Water need to tackle in the future which might also impact the bill

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4 Sustainable Abstraction

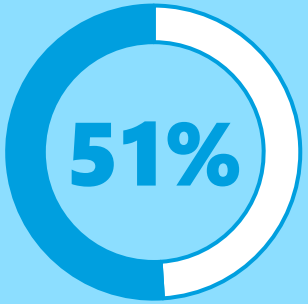
5 Lead Pipes

Sustainable Abstraction: Customers are broadly supportive of plans to reduce abstraction where possible, and favour more rapid reductions, many would like certainty about the environmental benefits beforehand though

- Responding to the key research questions
- Should Thames Water aim to improve the environment (related to abstracting water) beyond current statutory requirements?
  - While customers are largely happy at the progress Thames Water has made, they expect immediate action to further reduce abstraction from rivers and chalk streams and further develop existing and new reservoirs and sources of water.
- Which environmental objectives do customers value most - benefits to the environment/biodiversity of reduced abstraction versus drawbacks of pumping water from elsewhere with an increased carbon footprint as a result?
  - There is a clear benefit to the environment of reduced abstraction; this is strongly supported. At the same time, many customers acknowledge that the short term environmental damage caused by building pipelines may be worth it for the long term benefits (with the caveat that 'environmental damage' is not easily quantifiable in customers minds).
- How quickly should changes be made (if at all)?
  - Customers are largely supportive of a rapid rate of change, with half wanting reductions to be completed by 2025-30 and a further two in five supporting reductions by 2030-35. For these customers, the increase in bills feels manageable and the benefits to doing so (both environmental and to secure a stable water supply) are clear.
- How sure should Thames Water be that reduced abstraction will result in environmental benefits before making reductions?
  - More than half of customers do not require complete certainty of environmental benefits to support reduced abstraction.
    - However, two fifths want Thames Water to be 'completely certain' there would be an environmental benefit before proceeding with reduced abstraction, believing that to do so otherwise, could be a waste of customer money.

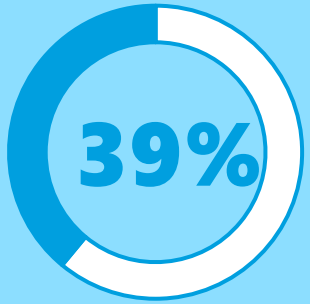
Sustainable Abstraction: Half of customers believe Thames Water should reduce abstraction during 2025-2030

Aim to reduce abstraction in all of the areas proposed during 2025-2030



- A £5 increase in yearly bills sounds affordable to most, with clear benefits
- Some believe this should happen sooner than 2025-2030

Aim for smaller reductions initially, so all reductions proposed are done by 2030-2035 instead



- Those who think it should be reduced over a longer time see this as lower priority compared to other initiatives
- Others reference the rising costs and bills elsewhere, seeing this as an unwelcome addition to their bills

Neither – they should reduce abstraction even more or in more places

- A few customers felt Thames Water should go further in reductions, largely due to the perceived environmental significance of chalk streams and rivers

Note: In terms of annual bill impacts for each option, customers had been focusing on the topic of this deep dive, although they were reminded that there may be other initiatives that Thames Water need to tackle in the future which might also impact the bill

Caution, the percentages shown on this page are based on a relatively small qualitative sample size, they are shown to indicate direction of sentiment only

1

Net Zero

2

Trunk Mains/ Replumb London

3

Waste Headroom, River Spills and Bathing Water

4

Sustainable Abstraction

5

Lead Pipes

Lead Pipes: Upon learning about the prevalence of lead pipes and their health implications, many want lead pipes to be replaced as quickly as possible

- Responding to the key research questions
- Should Thames Water assist with the replacement of lead pipes in customer properties during 2025-2030?
  - Customers would like to see Thames Water's support in replacing lead pipes and to do this as quickly as possible with minimal disruption.
  - The majority support Thames Water's initiatives to replace 3,000 water fountains in schools on the basis that it protects those most vulnerable. They also support plans to replace 67,000 customer lead pipes.
  - Many see the benefit of Thames Water being involved in the process of helping schools and customers to replace lead pipes, but not all believe it is directly Thames Water's responsibility, and suggest that councils and landlords should play a part.
- At what pace should Thames Water eradicate lead pipes from its network?
  - Customers would ideally want Thames Water to replace all the lead pipes that it owns by 2050 rather than by 2080.

Lead Pipes: Customers have a strong preference to replace lead pipes from 2025 to 2050, as the cost and disruption justifies removing what many perceive as a danger to public health

33 customers prefer Thames Water to replace all its lead pipes from 2025 to 2050

- Despite concerns about the disruptions, they conclude replacing lead pipes is the better thing to do for public health and the water network in general
- There is little concern about the impact on customer bills

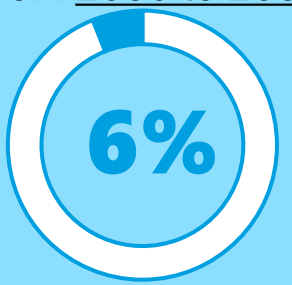
8 customers prefer Thames Water to replace all its lead pipes from 2025 to 2080

- These customers believe that the cost of the work may go up over time and disruptions may be greater than anticipated, so they believe this timeframe allows Thames Water greater flexibility to balance their resources and keep costs and disruptions low while adhering to the EU Drinking Water Directive

6 customers cannot decide; they believe the pros and cons of replacing by 2050 and 2080 are balanced

- These customers do not like the level of disruption caused by the 2050 approach, but believe 2080 is too long to address what they perceive as an important public health issue, they think the pros and cons are balanced

3 customers prefer Thames Water to replace all its lead pipes from 2030 to 2080



- These customers believe that waiting for technological innovations may make the process more efficient and assume that this approach provides Thames Water with the resources to pursue other equally important initiatives to replacing lead in the meantime

Note: In terms of annual bill impacts for each option, customers had been focusing on the topic of this deep dive, although they were reminded that there may be other initiatives that Thames Water need to tackle in the future which might also impact the bill

Caution, the percentages shown on this page are based on a relatively small qualitative sample size, they are shown to indicate direction of sentiment only

Prioritising the issues

An analysis of the importance of all 8 topics covered in the deep dives

Prioritising the initiatives

- For each deep dive, at the close of the community, participants ranked all of the topics in terms of the priority they feel Thames Water should give to improving each.
- The findings should be taken as indicative only as customers based their answers on only limited information, apart from the topic(s) that they would have just been focusing on
- However, some clear patterns emerge when looking at the results across all deep dive communities:
  - A higher ranking for the core water and sewerage service topics
  - More 'niche' topics such as bathing water being deemed of lower importance

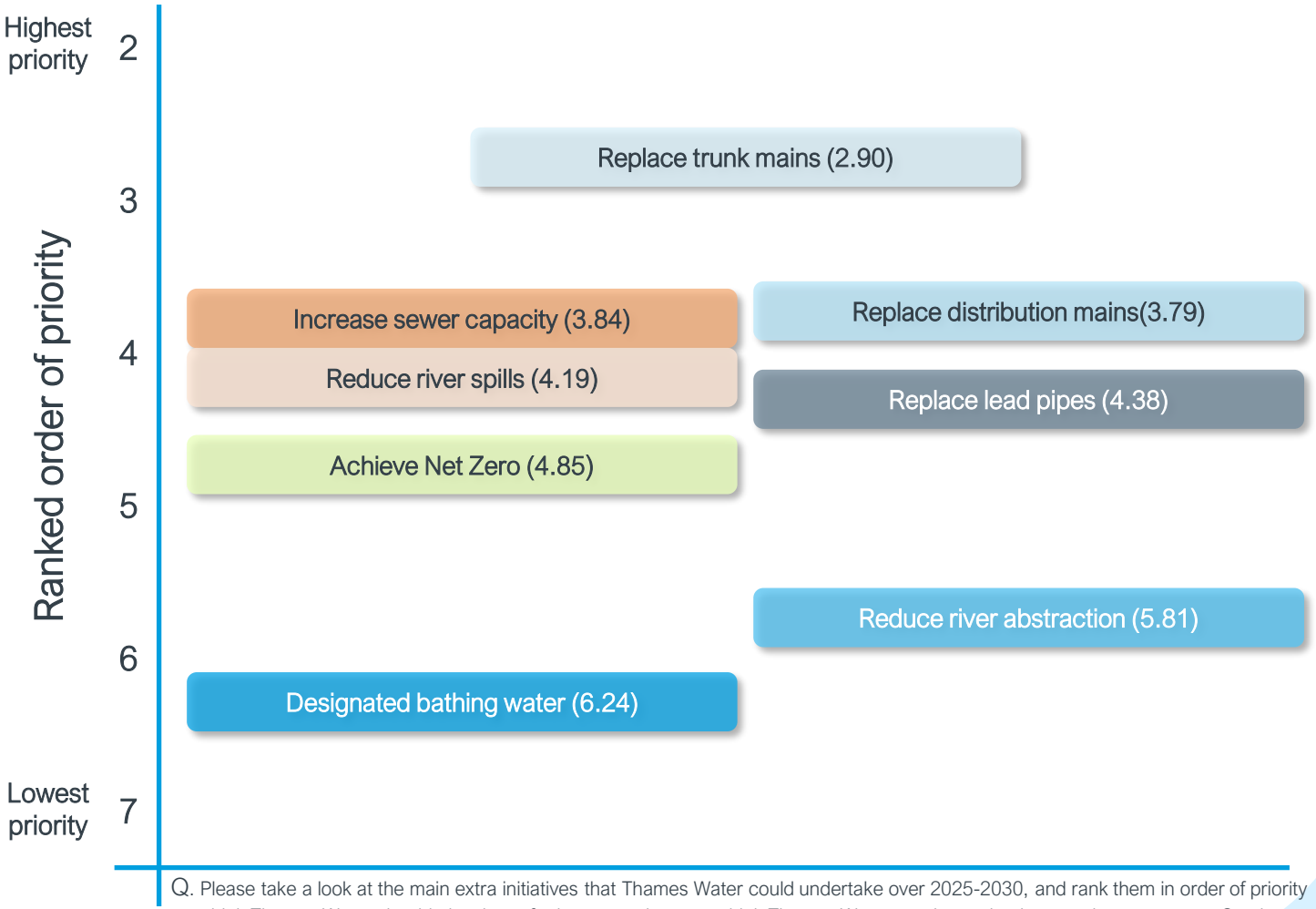
- A note on base sizes: findings should be taken as indicative only, as the base sizes for each individual community were relatively low
- The breakdowns by demographic in particular show differences higher and lower than the overall total, care should be taken in interpreting these as meaningful

Descriptions ranked by customers	Labels used for the following charts
"Replacing large sections of aging water pipework in London, rather than fixing individual leaks as they happen"	Replace distribution mains
"Replacing a number of large, aging water mains that could be dangerous if they burst (for example could flood nearby basements and underground stations)"	Replace trunk mains
"Helping any customers with lead pipes on their properties to replace those, to eliminate the risk of lead being in their water supplies"	Replace lead pipes
"Increasing the capacity of the sewer network to prevent sewer overflows into homes and businesses"	Increase sewer capacity
"Ensuring stretches of rivers are safe for swimming in, by preventing sewer overflows into rivers in those areas"	Designated bathing water
"Achieving Net Zero carbon emissions for its water and waste operations"	Achieve Net Zero
"Reducing the potential damage to rare types of rivers (like chalk streams) by reducing the amount of water taken from them and building pipelines to connect communities to other water sources instead"	Reduce river abstraction
"Reducing sewer overflows into rivers by improving sewage treatment works, aiming for the number of sewage spills to be lower than what the Environment Agency allows"	Reduce river spills

Replacement of trunk and distribution mains, followed by action on the wastewater network are the most important priorities for customers across the entire deep dive exercise

Core service delivery remains of paramount importance to customers across the board

- The replacement of trunk and distribution mains are prioritised highest for improvement
- This is followed by improving the sewer network to prevent flooding into properties and improving treatment works to prevent overflows into rivers
- The replacement of lead pipes sits with these core services as being important, largely due to the health risks involved
- Achieving Net Zero is seen as important, but falls behind initiatives that affect people directly in the here and now
- Sustainable abstraction appears towards the bottom of the list of priorities; keeping the water flowing is more important than the potential for damage to rivers
- Designated bathing water is seen as a niche requirement and is the least important of all



Based on 232 responses across all five deep dive research communities. A reminder that findings should be taken as indicative as customers based their answers on limited information, apart from the topic(s) that they would have just been focusing on.

Q. Please take a look at the main extra initiatives that Thames Water could undertake over 2025-2030, and rank them in order of priority you think Thames Water should give them, for instance where you think Thames Water need to make the most improvements. So, the most important initiative for Thames water to tackle should be no 1 and the least important initiative for them to tackle should be no 8.

The impact of deep dive learning on overall prioritisation (1)

The chart below shows how having undertaken a deep dive on a particular topics impacts the ranking given to that topic when asked to consider all of the initiatives. Green shading shows where the topic in question is ranked higher than the average of all five communities (dark = difference more than 0.5 of a ranking point, light = less than 0.5, a marginal difference).

- In all areas, studying a topic in depth ensures that the overall priority an issue is given is higher than across the average of all community scores.
- Replacing trunk mains and bathing water show only marginal increases over the average, the remainder show increases of more than 0.5.
- *These findings are indicative only and are not to be taken as statistically significant.*

Ranking Research community	Replace trunk mains	Replace distribution mains	Increase sewer capacity	Reduce river spills	Replace lead pipes	Achieve Net Zero	Reduce river abstraction	Designated bathing water
	Most important	<-	-	-	-	-	->	Least important
All communities total	3.79	2.90	3.84	4.19	4.38	4.85	5.81	6.24
Replace trunk mains	3.39	2.11	4.14	4.52	4.07	4.91	6.60	6.27
Replace distribution mains	3.39	2.11	4.14	4.52	4.07	4.91	6.60	6.27
Increase sewer capacity	4.08	4.53	2.85	3.11	4.79	5.28	5.38	5.98
Reduce river spills	4.08	4.53	2.85	3.11	4.79	5.28	5.38	5.98
Replace lead pipes	3.65	2.80	3.96	4.24	3.61	5.67	6.20	5.86
Achieve Net Zero	3.66	2.74	4.66	4.74	4.91	3.06	5.86	6.34
Reduce river abstraction	3.61	2.57	3.92	4.57	4.58	4.80	5.18	6.76
Designated bathing water	4.08	4.53	2.85	3.11	4.79	5.28	5.38	5.98

Based on 232 responses across all five deep dive research communities

The impact of deep dive learning on overall prioritisation (2)

The chart below shows where studying certain topics ***downgrades*** the priority given to other topics by more than 0.75 ranking points.

- In-depth study of waste headroom, river spills and bathing water appears to downgrade the priority of replacing distribution mains.
- The study of Net Zero downgrades the priority of increasing sewer capacity.
- The study of trunk and distribution mains downgrades the priority given to river abstraction.
- ***These findings are indicative only and are not to be taken as statistically significant.***

Ranking Research community	Replace trunk mains	Replace distribution mains	Increase sewer capacity	Reduce river spills	Replace lead pipes	Achieve Net Zero	Reduce river abstraction	Designated bathing water
	Most important	<-	-	-	-	-	->	Least important
All communities total	3.79	2.90	3.84	4.19	4.38	4.85	5.81	6.24
Replace trunk mains	**3.39**	2.11	4.14	4.52	4.07	4.91	6.60	6.27
Replace distribution mains	3.39	**2.11**	4.14	4.52	4.07	4.91	6.60	6.27
Increase sewer capacity	4.08	4.53	**2.85**	3.11	4.79	5.28	5.38	5.98
Reduce river spills	4.08	4.53	2.85	**3.11**	4.79	5.28	5.38	5.98
Replace lead pipes	3.65	2.80	3.96	4.24	**3.61**	5.67	6.20	5.86
Achieve Net Zero	3.66	2.74	4.66	4.74	4.91	**3.06**	5.86	6.34
Reduce river abstraction	3.61	2.57	3.92	4.57	4.58	4.80	**5.18**	6.76
Designated bathing water	4.08	4.53	2.85	3.11	4.79	5.28	5.38	**5.98**

Based on 232 responses across all five deep dive research communities

Prioritisation: variations by **age**

- Some generational differences are evident here.
- Older age groups (45+) are more likely to prioritise core service delivery (water and sewerage network) higher than the average.
- Younger age groups (18 to 34) are more likely to prioritise **lead pipes**, **Net Zero**, **river abstraction** and **bathing water** higher than the overall average.
    - This reflects findings from other work that younger generations are more environmentally focused.

Average ranking	All respondents	18-24	25-34	35-44	45-54	55-64	65+
Replace trunk mains	2.90	3.05	3.49	2.85	3.04	2.66	2.04
Replace distribution mains	3.79	4.40	4.22	3.25	3.60	4.42	3.18
Increase sewer capacity	3.84	4.30	4.24	4.04	3.75	3.39	3.21
Reduce river spills	4.19	4.75	3.93	4.83	3.88	3.89	3.89
Replace lead pipes	4.38	3.65	4.31	4.19	4.48	4.61	4.89
Achieve Net Zero	4.85	4.00	4.11	4.49	5.35	5.55	5.54
Reduce river abstraction	5.81	5.15	5.71	5.85	5.83	5.55	6.71
Designated bathing water	6.24	6.70	5.98	6.51	6.06	5.92	6.54

Lower average rank than all

Higher average rank than all

Based on 232 responses across all five deep dive research communities, care should be taken in interpreting the differences between demographic groups due to low sample sizes to this level.
A reminder that findings should be taken as indicative as customers based their answers on limited information, apart from the topic(s) that they would have just been focusing on.

Prioritisation: variations by **gender**

- Female respondents rank **replacing trunk mains** and **reducing river abstraction** higher than the average.
- Male respondents rank these issues lower and all other issues higher than the average.

Average ranking	All respondents	Female	Male
Replace trunk mains	2.90	2.60	3.22
Replace distribution mains	3.79	3.92	3.65
Increase sewer capacity	3.84	3.95	3.72
Reduce river spills	4.19	4.24	4.13
Replace lead pipes	4.38	4.45	4.31
Achieve Net Zero	4.85	4.87	4.83
Reduce river abstraction	5.81	5.58	6.06
Designated bathing water	6.24	6.39	6.07

Lower average rank than all

Higher average rank than all

Based on 232 responses across all five deep dive research communities, care should be taken in interpreting the differences between demographic groups due to low sample sizes to this level.
A reminder that findings should be taken as indicative as customers based their answers on limited information, apart from the topic(s) that they would have just been focusing on.

Prioritisation: variations by SEG

- C2DE customers prioritise core service delivery: **replacing trunk and distribution mains** and **reducing river spills** as slightly more important than ABC1 customers.
- **Replacing lead pipes** and **achieving Net Zero** are higher priorities for ABC1 compared to C2DE respondents.

Average ranking	All respondents	ABC1	C2DE
Replace trunk mains	2.90	2.94	2.82
Replace distribution mains	3.79	3.84	3.70
Increase sewer capacity	3.84	3.84	3.82
Reduce river spills	4.19	4.30	3.95
Replace lead pipes	4.38	4.26	4.64
Achieve Net Zero	4.85	4.60	5.41
Reduce river abstraction	5.81	5.91	5.62
Designated bathing water	6.24	6.33	6.04

Lower average rank than all

Higher average rank than all

Based on 232 responses across all five deep dive research communities, care should be taken in interpreting the differences between demographic groups due to low sample sizes to this level.
A reminder that findings should be taken as indicative as customers based their answers on limited information, apart from the topic(s) that they would have just been focusing on.

Prioritisation: variations by **ethnicity**

- BAME participants see **replacing trunk, distribution and lead pipes** and **achieving net zero** as slightly more important than the overall audience.
- White participants see **sewer capacity, river spills, river abstraction** and **bathing water** as slightly more important than the overall audience.

Average ranking	All respondents	White only	BAME only
Replace trunk mains	2.90	3.08	2.62
Replace distribution mains	3.79	3.87	3.67
Increase sewer capacity	3.84	3.71	4.04
Reduce river spills	4.19	3.93	4.60
Replace lead pipes	4.38	4.50	4.18
Achieve Net Zero	4.85	5.18	4.33
Reduce river abstraction	5.81	5.58	6.19
Designated bathing water	6.24	6.15	6.37

Lower average rank than all

Higher average rank than all

Based on 232 responses across all five deep dive research communities, care should be taken in interpreting the differences between demographic groups due to low sample sizes to this level.
A reminder that findings should be taken as indicative as customers based their answers on limited information, apart from the topic(s) that they would have just been focusing on.

Prioritisation: variations by **vulnerable/non-vulnerable**

- Vulnerable customers prioritise most of the initiatives marginally higher than the overall audience, with the exception of **replacing lead pipes** and **achieving Net Zero.**

Average ranking	All respondents	Non-Vulnerable	Vulnerable
Replace trunk mains	2.90	2.96	2.52
Replace distribution mains	3.79	3.82	3.61
Increase sewer capacity	3.84	3.85	3.77
Reduce river spills	4.19	4.20	4.06
Replace lead pipes	4.38	4.34	4.65
Achieve Net Zero	4.85	4.72	5.71
Reduce river abstraction	5.81	5.84	5.65
Designated bathing water	6.24	6.27	6.03

Lower average rank than all

Higher average rank than all

Based on 232 responses across all five deep dive research communities, care should be taken in interpreting the differences between demographic groups due to low sample sizes to this level.
A reminder that findings should be taken as indicative as customers based their answers on limited information, apart from the topic(s) that they would have just been focusing on.

Prioritisation: variations by **region (London/Non London)**

- London customers give **replacing trunk, distribution and lead pipes** a higher priority than the average.
  - This may be explained by the fact that older mains and lead pipes are particularly prevalent in the London area (as was mentioned in the relevant deep dives).

Average ranking	All respondents	London	Non London
Replace trunk mains	2.90	2.83	3.03
Replace distribution mains	3.79	3.58	4.13
Increase sewer capacity	3.84	3.93	3.75
Reduce river spills	4.19	4.25	4.14
Replace lead pipes	4.38	4.18	4.70
Achieve Net Zero	4.85	4.93	4.80
Reduce river abstraction	5.81	5.98	5.65
Designated bathing water	6.24	6.33	6.17

Lower average rank than all

Higher average rank than all

Based on 232 responses across all five deep dive research communities, care should be taken in interpreting the differences between demographic groups due to low sample sizes to this level.
A reminder that findings should be taken as indicative as customers based their answers on limited information, apart from the topic(s) that they would have just been focusing on.

Prioritisation: variations for **future and business customers**

- The higher priority that future customers place on the environment-related initiatives, compared to the average (**achieving net zero, reducing river abstraction** and **bathing water**), is consistent with other findings.

Average ranking	All respondents	Future customers	Business customers
Replace trunk mains	2.90	3.00	3.17
Replace distribution mains	3.79	4.35	3.17
Increase sewer capacity	3.84	4.06	3.22
Reduce river spills	4.19	4.24	4.06
Replace lead pipes	4.38	3.47	4.28
Achieve Net Zero	4.85	3.82	5.11
Reduce river abstraction	5.81	4.88	6.89
Designated bathing water	6.24	6.06	6.11

Lower average rank than all

Higher average rank than all

Based on 232 responses across all five deep dive research communities, care should be taken in interpreting the differences between demographic groups due to low sample sizes to this level.
A reminder that findings should be taken as indicative as customers based their answers on limited information, apart from the topic(s) that they would have just been focusing on.

Appendix – Screener

Thames Water Customer Voices

JOB NUMBER: 5823

PROJECT: PR24 Deep Dives

QUESTIONNAIRE VERSION: V1

DATE: Feb 22

Thames Water Customer Voices

SPECIFICATIONS:

Scripting specifications			
Job code		Project (wave/stage if applicable)	Thames Water
Market and Languages	UK, English Only		
Sample source	Customer Voices	If 'Client List', specify pipe ins	
Stimulus path	n/a		
Scripting tools	n/a		
Member Sat Qs	No		
Target Criteria	All Thames Water customers – **clean and waste ONLY**		
Hard Quota table – *for 3rd party sample only.*			
Overall Target	Total n=100		
	Code name	Target %	Target
Customer Type			
3rd party re-directs – *PM to add for external sample provider projects*			

Invitation	
Subject line	New survey available - we'd love to hear from you
Pre header	You have a new survey available

Dear xxxx,

We are looking for people to take part in an exclusive research project where we will be asking for members to give their opinions on some important topics in relation to Thames Water's planning for the next few years ahead.

The research will involve logging into a platform where we will ask you to read some information on xxxx. You will be asked to provide your thoughts on what it means to you as a customer and evaluate some material we will be showing you.

The community will be open for xx days, starting on xxxx and closing on xxxxx.

Thames Water Customer Voices

The activities should take no more than 30-45 minutes per day and everyone who completes all the activities will receive a £xx VEX voucher (which can be used with over 150 High Street brands).

Click here to register your interest if you would like to take part

Regards

Claire, Customer Voices Community Manager

QUESTIONNAIRE:

INTRO TEXT
Thank you for your interest in taking part in our research on the topic of xxxx.
Please click below to get started...

NEW PAGE:

SECTION A – SCREENING

PIPE IN FROM CUSTOMER VOICES
- Gender
- Age
- Ethnicity
- Employment Status
- Location
- Clean and wastewater/ wastewater only
- Vulnerable
- NPS

ASK ALL
A1a. We are looking for people to take part in a piece of research which would involve logging into a text-based community and completing some activities. The activities will involve reading some information and then giving feedback on the topic. The community will run from xxxx to xxxx and is expected to take between 30 and 40 minutes each day.

If you are selected and complete all the activities, you will receive a £xx VEX voucher for your time. We will let you know by xxx if you have been chosen to take part.

Are you willing and available to take part?

1. Yes, I am free, and I'd like to take part
2. No, I cannot take part **SCREENOUT**

ASK IF A1 = 1

A2. The online discussion community will be hosted by Verve via our trusted third-party supplier, a market research company called Further.

Please note, your email address will be shared with Further, in order for you to be invited to join the community. Comments, activity results, videos and images you choose to upload/share during the community will be held on the Further platform. To read Further's privacy policy please click here [https://www.go-further.co/privacy].

We may also share comments, videos and images with Thames Water for internal purposes only. You can read their privacy policy here: https://www.thameswater.co.uk/legal/privacy-policy.

Are you happy for us to share your details with Further and in addition share any video and image content you share with Thames Water for research purposes only?

1. Yes, I am happy for you to share my details and any comment / video / image contact I upload **GO TO Q1**
2. No, I am not willing for you to share my details and any comment / video / image contact I upload *(This means you will not be able to take part in this research)* **SCREENOUT**

ASK ALL
MULTI CODE, RANDOMISE
Q1. The research will be conducted on an online platform – what device are you likely to use to complete the research if you are selected? *(Tick all that apply)*

1. Smart phone
2. Tablet
3. Laptop/PC
4. None of the above **(ANCHOR, EXCLUSIVE, SCREEN OUT)**

ASK ALL
SINGLE CODE PER STATEMENT. RANDOMISE ORDER OF STATEMENTS, BUT DO NOT RANDOMISE ORDER OF SCALE

APPEND RESPONSES TO Qs 2A – Q4 TO PANEL SAMPLE. ASK ALL WHO PREVIOUSLY HAVE NOT ANSWERED THESE QUESTIONS IN 6047 SEWAGE TREATMENT WORKS COMPLIANCE.

Q2a. What is your current employment status?
SINGLE CODE
1. Working full time – 30 hours a week or more **(GO TO Q2B)**
2. Working part time – between 8 and 29 hours a week **(GO TO Q2B)**
3. Self-employed – working 30 hours a week or more **(GO TO Q2B)**
4. Self-employed – working between 8 and 29 hours a week **(GO TO Q2B)**
5. Not working but seeking work or temporarily unemployed or sick
6. Not working and not seeking work
7. Currently on furlough / reduced hours / employer imposed temporary leave of absence as a result of the Coronavirus
8. In full time education
9. Retired
10. Homemaker e.g. housewife, househusband etc
11. Other (please specify) **[HOLD]**

Thames Water Customer Voices

ALL WHO CODE 1 – 4 AT Q2A
Q2b. In your job, are you responsible for dealing with Thames Water or for paying the water and waste bill?
SINGLE CODE
1. Yes **(GO TO Q2C)**
2. No **(GO TO Q3)**

ALL WHO CODE 1 AT Q2B

Q2c. What is the main activity of the organisation you work for?
SINGLE CODE
1. Construction, mining, manufacturing, agriculture
2. Wholesale, retail, repair motor vehicles, transportation
3. Accommodation and food service activities
4. Services – information, financial, real estate, professional, scientific, technical activities, admin and support
5. Public organisation, education, health and social work activities
6. Other services

ALL WHO CODE 1 AT Q2B
Q2d. How many workers (permanent and temporary) are there at your organisation?
1. 0 – only you / self-employed
2. 1-9 employees
3. 10-49 employees
4. 50-99 employees
5. 100-249 employees
6. 250-499 employees
7. 500+ employees

ALL WHO CODE 1 AT Q2B

Q2e. As a proportion of your organisations' outgoings, how much does it spend on water?

1. Less than 5% of outgoings spent on water
2. More than 5% of outgoings spent on water
3. Don't know

ASK ALL, MULTICODE, RANDOMISE

Q3. Which of the following have you done in the past 5 years?

1. Cleaned up your street or took part in a cleaner streets campaign
2. Reported a problem to the council such as fly tipping, broken paving or street lamps that don't work
3. Campaigned on a local issue such as reducing speed limits on local roads
4. Campaigned for environmental initiatives
5. Volunteered for local charities or events
6. Raised funds for a local charity or cause
7. Take an active part in a local society or community group (including PTA, scouts etc)
8. Are involved with the local council (either an elected role or in a clerical capacity)

Thames Water Customer Voices

9. 8. Are involved in running a local sports club (e.g. coach a kid's sports team)
10. 9. None of the above **(ANCHOR, EXCLUSIVE)**

ASK ALL, MULTICODE, RANDOMISE

Q4. Which of the following apply to you?

1. I have taken part in cleaning up my street or have taken part in a cleaner streets campaign in the last 12 months
2. I regularly take part in a green gym (gardening activities that benefit the community)
3. I have recently been involved in a planting event (e.g. planting trees or helping maintain the local natural environment)
4. I am a member or donate regularly to an environmental or wildlife charity?
5. I take part in outdoor sports or activity in a natural water environment (e.g. fishing, surfing, paddle boarding, rowing, wild swimming etc)
6. I have actively researched in some detail the environmental impact of flooding/water quality
7. I have campaigned or raised money for a local environmental issue in the last two years
8. I am disciplined about researching and using companies and products that are kind to the environment
9. I eat ethically (e.g. have become a vegetarian/vegan, buy local or sustainable foods) for environmental reasons
10. I have invested in renewable energy for environmental reasons (e.g. solar panels)
11. I have invested in ways to reduce water wastage in my home for environmental reasons (e.g. installed water saving shower heads or flow restrictors)
12. None of the above **(ANCHOR, EXCLUSIVE)**

ASK IF NO APPENDED DATA, MULTICODE, RANDOMISE

NPS. If you were able to choose your water provider, how likely is it that you would recommend Thames Water to a friend or family member? On a scale of 0 to 10 where 0 is not at all likely and 10 is extremely likely.

[SINGLE CODE – SCALE FROM 0-10]

HIDDEN VARIABLE 'NPS GROUP':
1. Super detractors (0-4)
2. Detractors (5-6)
3. Passives (7-8)
4. Promoters (9-10)

ASK ALL, SINGLE CODE

Q5. Approximately how far do you live from the nearest river?

1. Less than a mile
2. 1 – 2.9 miles
3. 3 – 5.9 miles

4. 6 – 9.9 miles
5. More than 10 miles

ASK ALL, SINGLE CODE

Q6. On average, how often do you and your family visit rivers in your area?

1. More than once a week
2. Once a week
3. 2 – 3 times per month
4. Once a month
5. Once every 2 – 3 months
6. Once every 4 – 6 months
7. Less often
8. I / my family and I do not visit rivers

END / SCREENOUT TEXT

Thank you for your time today. Unfortunately, you won't be able to join us on this community. Thank you for taking the time to feedback. We will be doing many more research projects soon, so please keep an eye out for more research project invitations in the near future.

COMPLETE MESSAGE

Thank you for expressing an interest in our research.

Please note places are limited, so unfortunately, we cannot invite everyone to take part. We will be in touch by xxxx if you have been selected to take part in the next stage, so please keep an eye on your inbox, including your junk-mail folders.

Invite email	
Subject line	Congratulations! You have been selected to take part in the next stage of our research project for Thames Water
Pre header	A three-day online pop-up community

Hi xxx,

Thank you for agreeing to taking part in our exclusive research project for Thames Water, we really appreciate you taking the time to join us!

We are very pleased to confirm you have been selected for the next stage our research project and we would like to invite you to our pop-up community.

During the research we will be asking you about Thames Water, specifically about xxxx. You'll also be asked to evaluate some material we'll be showing you. Your contribution will directly influence the decisions that Thames Water may take. The activities should take no more than 30-45 minutes of your time each day at a time and place that suits you. You will also receive a £60 VEX voucher for completing all of the tasks.

The community will be live from xxxx to xxxx with activities going live each day.

As mentioned to you previously, Comments, activity results, videos and images you choose to upload/share during the community will be held on the Further platform. To read Further' s privacy policy please click here. We may also share comments, videos and images with Thames Water for internal purposes only. You can read their privacy policy here.

Join Further platform: (Insert link)

Your community moderators will be Graham and Jay– experienced qualitative researchers from consumer insight agency Verve.

If you have any questions about this **community** or the **goal of this research project**, please send an email to Jay at J.Daniells@addverve.com or Graham at G.Brown@addverve.com

If you have any questions about the **incentive offered** for this project or **when it will be sent**, please contact us at claire@vervevoices.co.uk

Many thanks,
Claire, Customer Voices Community Manager

Appendix –
Net Zero discussion guide & stimulus

Welcome

Welcome to the community
Before we begin, we thought it would be important to tell you a bit more about this research.

Every five years, water and sewerage companies take part in what is known as a Price Review. During this process, water and sewerage companies plan out the activities they will undertake over a specified five-year period in terms of delivering for customers, and any impacts on the bill that their activities might have. These activities range from delivering customer services, managing the water and sewerage networks (including repairs and replacements), reducing carbon emissions, and making a difference in local communities (including the natural environment such as rivers and reservoirs). These five-year plans are presented to Ofwat, the water and sewerage industry regulator, which has the power to accept or reject each company's plans and proposed bill impacts. The current Price Review covers activities planned for the period 2025-2030.

Water and sewerage companies have a duty to consult with their customers about their plans, and to reflect this in submitting their plans to Ofwat.

This research is about one element of Thames Water's price review, specifically the reduction of carbon emissions.

We are looking for your feedback on Thames Water's plans in this area. All of your feedback will be taken account of in a report written by Verve, and decisions about what course of action Thames Water may take in reducing its emissions will be influenced by your comments. If you have any questions about this, please don't hesitate to drop us a line.

And now on to the activities…

Please click on the "next activity" below to be taken to your first activity of the day

Activity 1.1- Introductions

Welcome to your first activity.

Future bill payer welcome placeholder- Over the next few days we want to learn about your views on the environment, Net-Zero and what some of Thames Waters proposed initiatives will mean for you. We know you don't pay bills right now but please base your answers as though you would be (because you may have to in the not too distant future!)

Business welcome placeholder- Welcome to the community! Over the next few days we want to learn about your views on the environment, Net-Zero and what some of Thames Waters proposed initiatives will mean for you and your business

The first thing we want to talk about is the environment and climate change and what this means to you.

So please answer the following:

- How important is climate change and reducing global warming for you?
- Do you think there are any challenges for the UK in this area? If so, what are biggest challenges?
- How knowledgeable would you say you are about the environmental impact of your home and lifestyle?
- To what extent does an organisation's environmental credentials and initiatives affect your opinion about them?

Activity 1.2- Organisations and environmental pledges

We are now going to show you three brief examples of what some organisations are doing to reduce their and others' environmental impact.

- M&S have recently committed to reach 'Net-Zero' emissions across their entire supply chain and product categories by 2040. They have pledged to not use any materials from endangered or ancient forests, reduce their packaging and reduce emissions that are emitted from their buildings.

- UK Power Networks maintain electricity cables and lines across London, the South-East and East of England. They have committed to carbon neutrality by 2050 and forecast 80% of homes in their network will be powered by renewable sources of energy by then. These renewable sources consist of energy generated from more increasingly affordable solar panels and wind turbine technology. They are also investing in high tech-sustainable substations that will communicate with each other using 5G. This will ensure they are running on the most efficient configurations possible, allowing for new renewable energy sources.
- The city of Bristol aims to be carbon neutral by 2050. Investing in electric vehicles is a major part of this. By 2026 they plan for 50% of the public sector transport fleet to consist of ultra-low-emission-vehicles. The council are working to ensure the infrastructure will be in place to support this.

Specifically, please tell us:

- How important is it that these organisations take these steps? What do you think are the advantages and disadvantages of their approaches?
- What do you think might be the wider benefits of tackling climate change? And are there any disadvantages?
- How urgent an issue do you think the need to tackle climate change is? Do you think these companies are doing the right amount, too much or not enough?
- What are your expectations of Thames Water with regards to tackling climate change?
- Are you aware of anything specific that Thames Water is doing?
- Is there anything you would *like* to see them doing to tackle climate change?

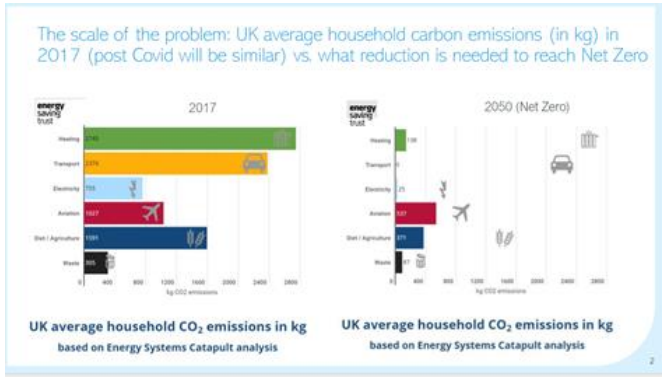
1.3 Awareness of Net Zero

Now we'd like to get a little more specific.

- What do you understand by the term 'Net Zero'?
- Is it a term you have heard?
- Were you aware that it refers to 'net zero' carbon emissions?

If you are a bit unsure, or to refresh yourself with what 'Net Zero' is, and the rationale behind it, please read below.

Full sized versions were viewed by participants



- What are your first impressions of Net Zero? Do you have any questions or concerns?
- Have you learned anything you didn't know before reading this article?
- How important do you think it is that the UK aims to meet Net Zero targets by 2050? What is the impact on you and your family?

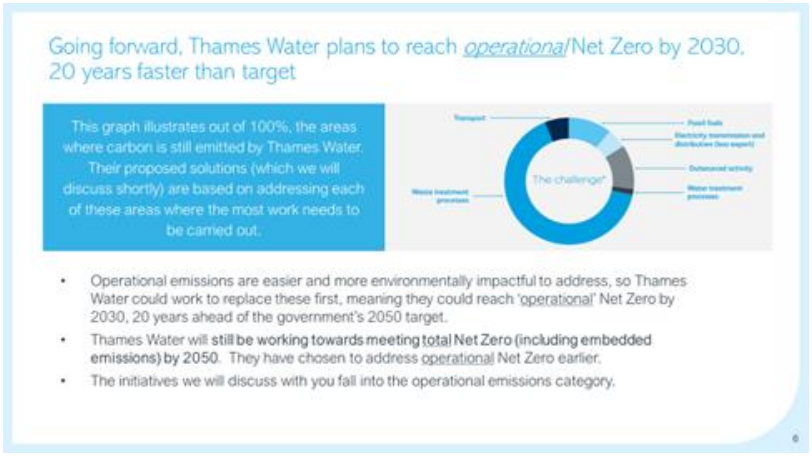
2.1 Introduction to Thames Water's Net Zero agenda

Yesterday we discussed your attitudes to environmental issues, examples of environmental initiatives, how you think Thames Water is performing with regards to climate change and 'Net-Zero'.

Today we will talk about Thames Water's plans for the future to understand if they meet your expectations.

Please click on the image below to learn more about what Thames Water must do to reach Net Zero, what it has achieved so far and their plans for the future

Full sized versions were viewed by participants



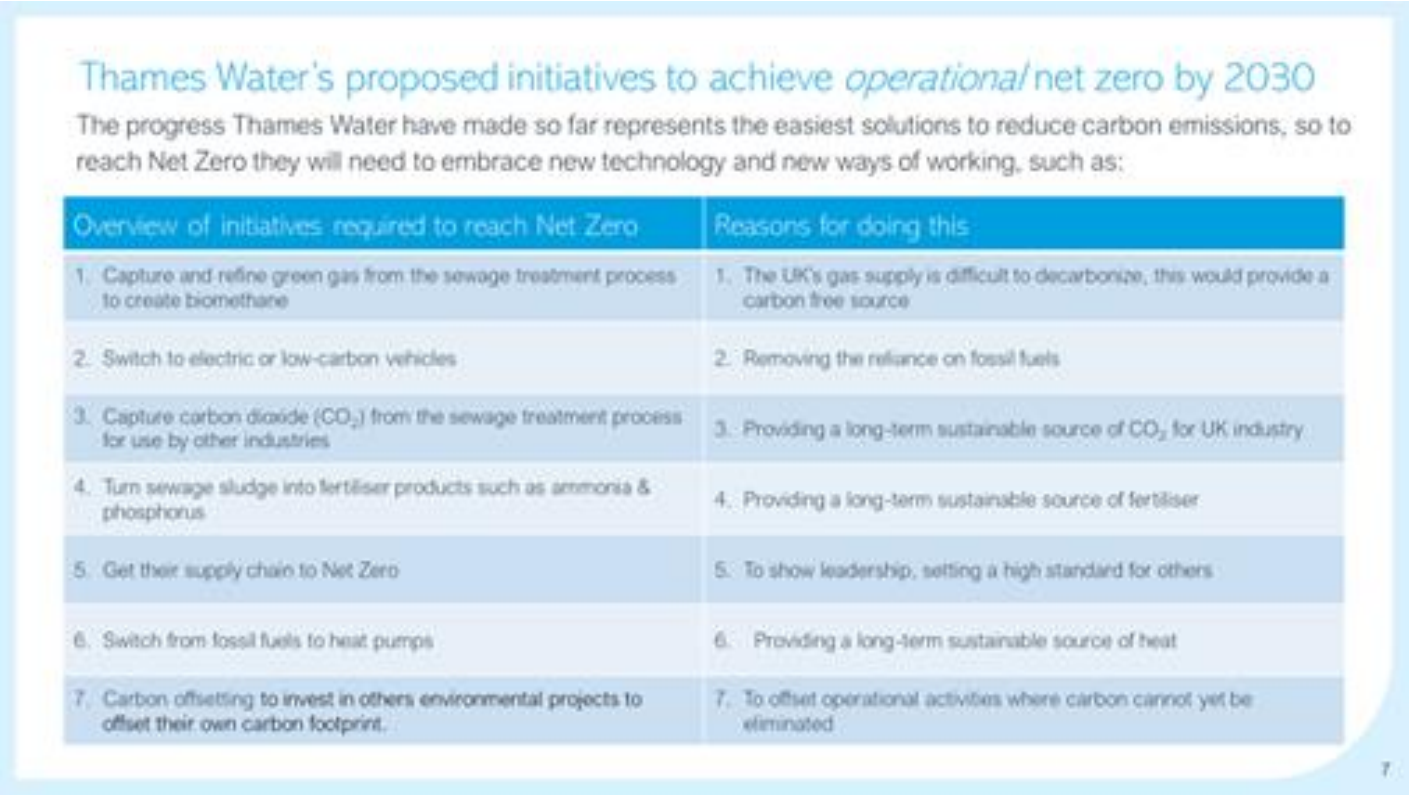
2.1 Introduction to Thames Water's Net Zero agenda

- What are your initial reactions to what you have just read?
- Do you have any outstanding questions after reading these pages?
- How do you feel about what Thames Water has achieved to date?
- What do you think about Thames Water's plans to meet 'operational' Net Zero by 2030? Do you think it's a good idea to prioritise this or should Thames Water put equal effort into solving its embedded emissions (such as construction materials from their suppliers) in this early phase of their Net Zero plans?
- Looking at how they plan to do this, from the information you have, do you feel their ambition to reach operational Net Zero by 2030 is OK, not fast enough or too fast? Why?
- What, if any, questions do you have after reading this? Is there anything else that you would like to know?
- What are your views overall on Thames Water's plans to reduce their carbon emissions? Is this what you would expect of a business like Thames Water? Would you expect them to be doing any more or less?

2.2 Introduction to Thames Waters roadmap for Net Zero in detail

Based on these challenges, Thames Water have planned the following activities:

Full sized version was viewed by participant



Thames Water's proposed initiatives to achieve *operational* net zero by 2030

The progress Thames Water have made so far represents the easiest solutions to reduce carbon emissions, so to reach Net Zero they will need to embrace new technology and new ways of working, such as:

Overview of initiatives required to reach Net Zero	Reasons for doing this
1. Capture and refine green gas from the sewage treatment process to create biomethane	1. The UK's gas supply is difficult to decarbonize, this would provide a carbon free source
2. Switch to electric or low-carbon vehicles	2. Removing the reliance on fossil fuels
3. Capture carbon dioxide (CO_2) from the sewage treatment process for use by other industries	3. Providing a long-term sustainable source of CO_2 for UK industry
4. Turn sewage sludge into fertiliser products such as ammonia & phosphorus	4. Providing a long-term sustainable source of fertiliser
5. Get their supply chain to Net Zero	5. To show leadership, setting a high standard for others
6. Switch from fossil fuels to heat pumps	6. Providing a long-term sustainable source of heat
7. Carbon offsetting to invest in others environmental projects to offset their own carbon footprint.	7. To offset operational activities where carbon cannot yet be eliminated

7

2.2 Introduction to Thames Waters roadmap for Net Zero in detail

- What are your initial reactions to this plan?
- At a glance, which of these areas do you think should be the biggest priority for Thames Water? Why?
- Is there anything they shouldn't do? Why?
- Do you have any questions or concerns about any of these activities and initiatives?
- Can you see any potential benefits to any of these activities and initiatives? What about downsides?
- Do you trust that Thames Water will be able to do this? Why/why not?
- Is there any other information that you would like to see in order to be able to evaluate Thames Water's plans to meet operational net zero by 2030?

3.1 Assessment of Thames Waters Net Zero roadmap in detail- first thoughts

Welcome back to day 3 of your community!

Yesterday we discussed Thames Waters Net Zero goals and an overview of proposed initiatives to get there.

Today, we will provide detail on each of these so you can provide us with informed feedback if you think this is or isn't a good initiative to reach Net Zero by 2030.

Please note before we begin, for each initiative we are going to provide you with estimates of how much this will increase your bill by. When you are providing your feedback, please remember there are 7 initiatives. If you agreed to Thames Water's plans, it would total approximately £1.50 to your annual bill between 2025-2030 (£7.5 over 5 years).

For context, the average household bill for Thames Water customers was £418 in 2021-22, so that amount may have been higher or lower for different customers (depending on things like having metered water).

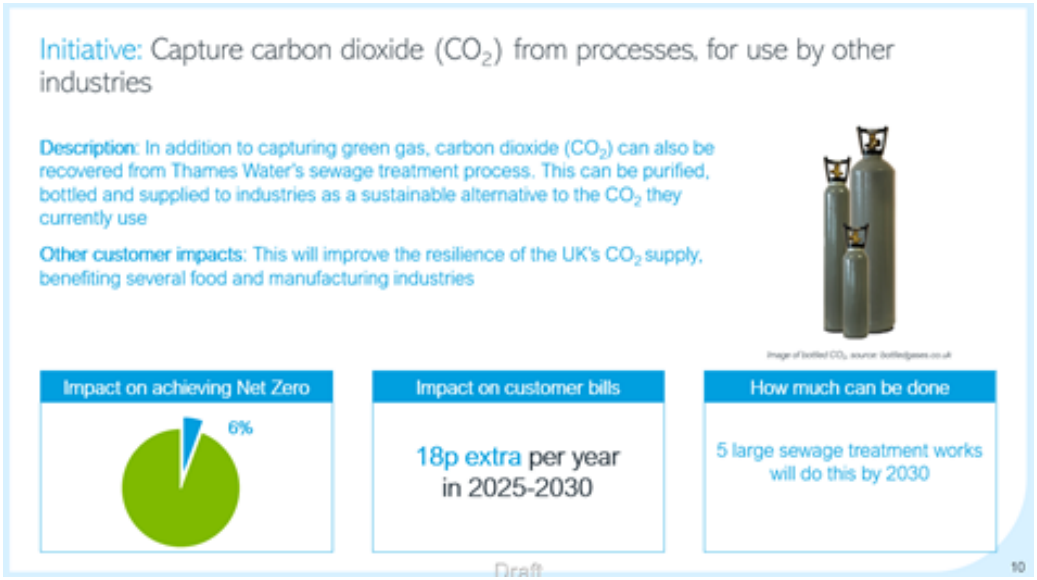
Do keep in mind that Thames Water have other initiatives as well as Net Zero to tackle in the future which might also impact the bill – these may include actions to ensure a reliable water & wastewater service and to protect the environment.

Also, please note that when you review each of these, we will tell you how much % this contributes towards the Net Zero target. They will not add up to 100% because there are some other activities that Thames Water will have to do regardless, such as replacing equipment that has come to the end of its life, with more efficient equipment.

- Firstly, before you discuss each individual initiative, how do you feel about the possibility of a potential £1.50 added to your annual bill from 2025-2030? Is this affordable? Is this acceptable? Would you be prepared to pay this if it meant Thames Water would reach operational net zero by 2030? Please talk us through your thinking here.

Initiative : Capture carbon dioxide (CO2) from their process, for use by other industries

Full sized versions was viewed by participants



- What are your first impressions of this?
- Do you approve of this part of the plan? Why/why not?
- How important/not important do you feel this initiative is? Why?
- How do you feel about how much can be done by 2030?
- How do you feel about the bill increase? Do you think it's worth it based on everything you've read?
- Would you be willing to pay a bit more for this particular initiative so Thames Water achieved Net Zero faster than 2030? Or would you want to pay less for this and them achieve it over a longer time? Please talk us through your reasons here.
- Is there anything unclear about this, or anything else you'd like to know that would help you make a better-informed opinion about this?

Initiative: Switch from fossil fuels to heat pumps

Full sized version was viewed by participants

- What are your first impressions of this?
- Overall, do you approve of this part of the roadmap? Why/why not?
- What are your first impressions of this?
- Do you approve of this part of the plan? Why/why not?
- How important/not important do you feel this initiative is? Why?
- How do you feel about how much can be done by 2030?
- How do you feel about the bill increase? Do you think it's worth it based on everything you've read?
- Would you be willing to pay a bit more for this particular initiative so Thames Water achieved Net Zero faster than 2030? Or would you want to pay less for this and them achieve it over a longer time? Please talk us through your reasons here.
- Is there anything unclear about this, or anything else you'd like to know that would help you make a better-informed opinion about this?

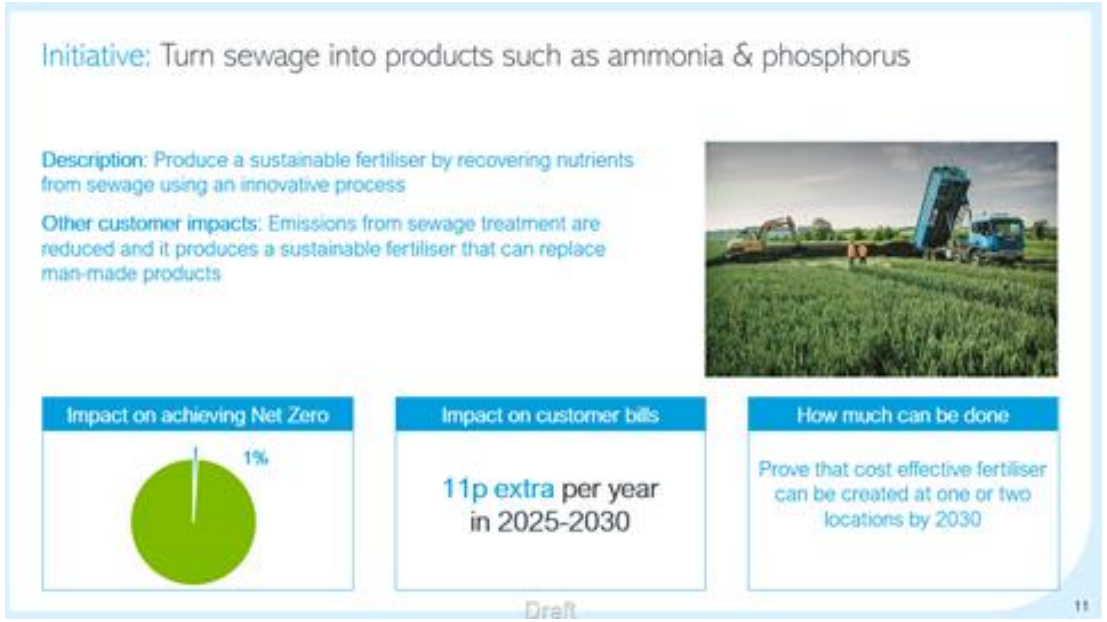
Initiative: Get supply chain to Net Zero

Full sized version was viewed by participants

- What are your first impressions of this?
- Do you approve of this part of the plan? Why/why not?
- How important/not important do you feel this initiative is? Why?
- How do you feel about the how much can be done by 2030?
- How do you feel about the bill increase? Do you think it's worth it based on everything you've read?
- Would you be willing to pay a bit more for this particular initiative so Thames Water achieved Net Zero faster than 2030? Or would you want to pay less for this and them achieve it over a longer time? Please talk us through your reasons here.
- Is there anything unclear about this, or anything else you'd like to know that would help you make a better-informed opinion about this?

Initiative: Turn sewage sludge into products such as ammonia & phosphorus

Full sized version was viewed by participants



- What are your first impressions of this?
- Do you approve of this part of the plan? Why/why not?
- How important/not important do you feel this initiative is? Why?
- How do you feel about how much can be done by 2030?
- How do you feel about the bill increase? Do you think it's worth it based on everything you've read?
- Would you be willing to pay a bit more for this particular initiative so Thames Water achieved Net Zero faster than 2030? Or would you want to pay less for this and them achieve it over a longer time? Please talk us through your reasons here.
- Is there anything unclear about this, or anything else you'd like to know that would help you make a better-informed opinion about this?

Initiative : Switch to electric/low-carbon vehicles

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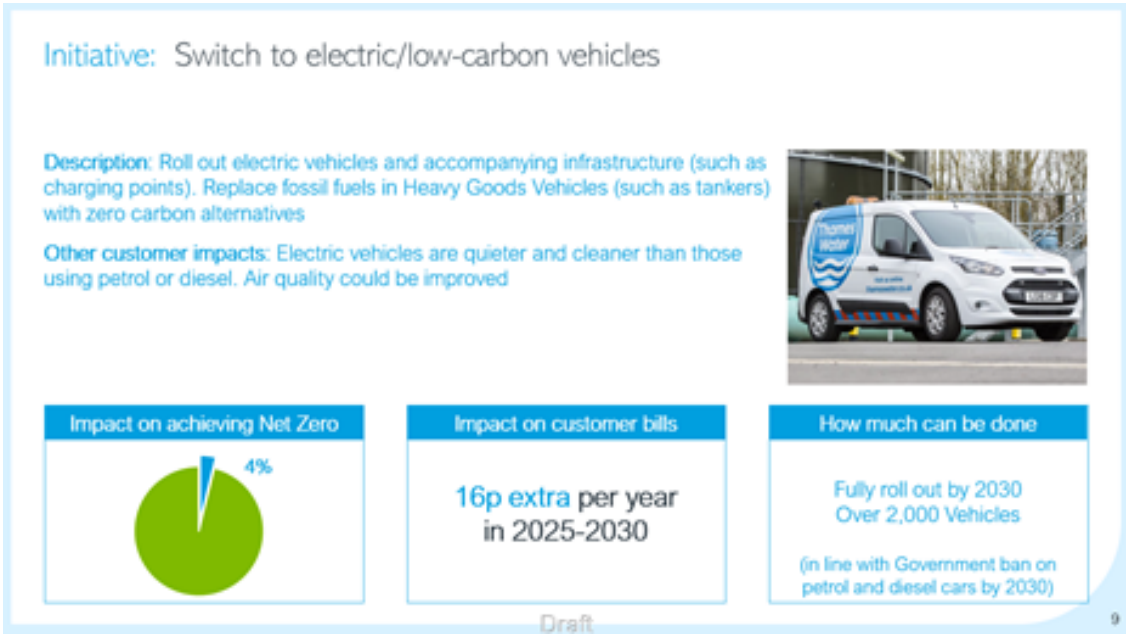


- What are your first impressions of this?
- Do you approve of this part of the plan? Why/why not?
- How important/not important do you feel this initiative is? Why?
- How do you feel about how much can be done by 2030?
- How do you feel about the bill increase? Do you think it's worth it based on everything you've read?
- Would you be willing to pay a bit more for this particular initiative so Thames Water achieved Net Zero faster than 2030? Or would you want to pay less for this and them achieve it over a longer time? Please talk us through your reasons here.
- Is there anything unclear about this, or anything else you'd like to know that would help you make a better-informed opinion about this?

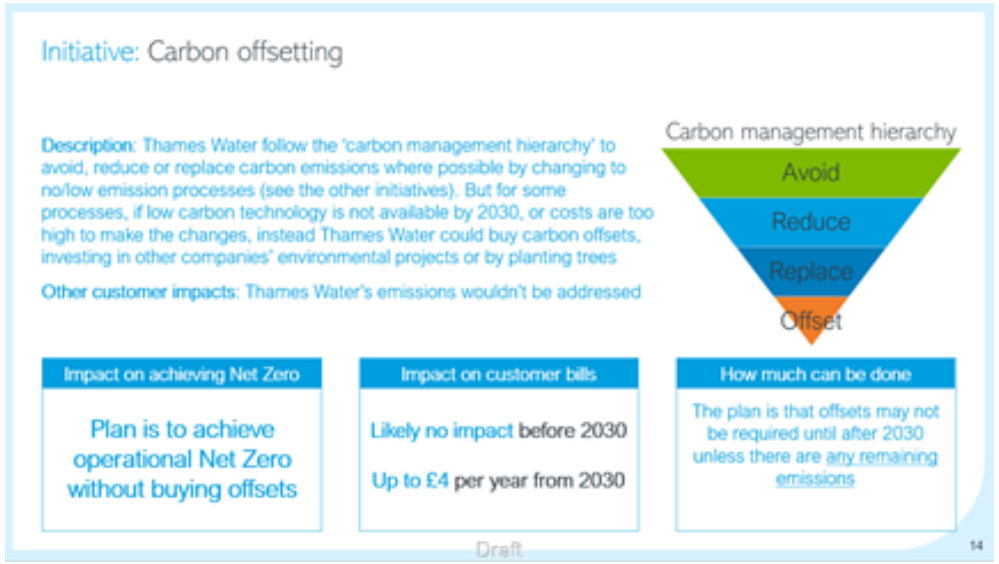
Initiative : Capture and refine green gas to biomethane from sewage sludge

Full sized version was viewed by participants

- What are your first impressions of this?
- Do you approve of this part of the plan? Why/why not?
- How important/not important do you feel this initiative is? Why?
- How do you feel about how much can be done by 2030?How do you feel about the bill increase? Do you think it's worth it based on everything you've read?
- Would you be willing to pay a bit more for this particular initiative so Thames Water achieved Net Zero faster than 2030? Or would you want to pay less for this and them achieve it over a longer time? Please talk us through your reasons here.
- Is there anything unclear about this, or anything else you'd like to know that would help you make a better-informed opinion about this?

Initiative: Carbon offsetting

Full sized version was viewed by participants

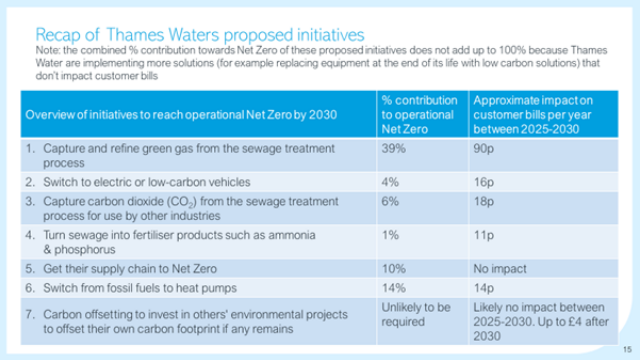


- What are your first impressions of this?
- Do you think carbon offsetting should be in the plan? Why/why not?
- How important/not important do you feel this initiative is? Why?
- How do you feel about how much can be done by 2030?
- How do you feel about the bill increase? Do you think it's worth it based on everything you've read?
- Would you be willing to pay a bit more for this particular initiative so Thames Water achieved Net Zero faster than 2030? Or would you want to pay less for this and them achieve it over a longer time? Please talk us through your reasons here.
- Is there anything unclear about this, or anything else you'd like to know that would help you make a better-informed opinion about this?

4.1 What activities should take priority

Thank you for all your help so far. Today is our final day and after everything you have reviewed, we'd like you to start the day by telling us in your opinion, what parts of the plan are the most important to prioritise, if they were to go ahead with it.
Please look at the image below for a recap of the initiatives you reviewed yesterday:

Full sized version was viewed by participants



Recap of Thames Waters proposed initiatives

Note: the combined % contribution towards Net Zero of these proposed initiatives does not add up to 100% because Thames Water are implementing more solutions (for example replacing equipment at the end of its life with low carbon solutions) that don't impact customer bills

Overview of initiatives to reach operational Net Zero by 2030	% contribution to operational Net Zero	Approximate impact on customer bills per year between 2025-2030
1. Capture and refine green gas from the sewage treatment process	39%	90p
2. Switch to electric or low-carbon vehicles	4%	16p
3. Capture carbon dioxide (CO_2) from the sewage treatment process for use by other industries	6%	18p
4. Turn sewage into fertiliser products such as ammonia & phosphorus	1%	11p
5. Get their supply chain to Net Zero	10%	No impact
6. Switch from fossil fuels to heat pumps	14%	14p
7. Carbon offsetting to invest in others' environmental projects to offset their own carbon footprint if any remains	Unlikely to be required	Likely no impact between 2025-2030. Up to £4 after 2030

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- Please rank the 7 aspects of the Thames Water Net Zero plan from the 1st - what you think is the most important thing for them to do - to the 7th the least important thing.

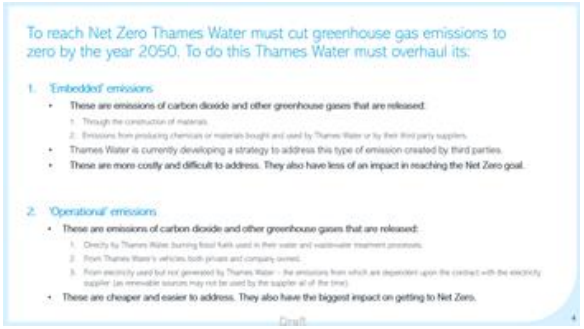
1. Capture and refine green gas from sewage
2. Switch to electric or low-carbon vehicles
3. Capture carbon dioxide (CO_2) from the sewage treatment process for use by other industries
4. Turn sewage into fertiliser products such as ammonia & phosphorus
5. Get their supply chain to Net Zero
6. Switch from fossil fuels to heat pumps
7. Carbon offsetting to invest in others environmental projects to offset their own carbon footprint

- Please let us know why you ranked the initiatives in this way.
- Please tell us more about the reasons for your first and last choices.

4.2 Final thoughts on the Thames Water Net Zero roadmap part 1

•Please see below for an overview of the overall plan, which could add up to £1.50 to your annual bill each year between 2025-2030, (based on the elements we discussed earlier).

Full sized versions were viewed by participants



Overall, after learning about Thames Water's plan to reach operational Net Zero by 2030, considering the benefits and costs for you as a customer, would you support or reject their plan?

1. I strongly support the plan
2. I somewhat support the plan
3. I somewhat reject the plan
4. I strongly reject the plan

- Please tell us the reasons for your answer.

4.3 Final thoughts on the Thames Water Net Zero roadmap part 2

Great stuff. So, before we move on to the final activity of the day we would like to know:

- What would you say is your biggest takeaway from this research?
- Do you have any unanswered questions or points of concerns you'd like to raise?
- Based on everything you have read; do you think Thames Water will be able to reach its operational Net Zero target by 2030? Yes/No? Why/why not?
- Would you expect to hear more about what Thames Water are doing to reach Net Zero (if we hadn't already told you)? If yes, how would you want to hear about this?

4.4 Wider context and final thoughts

Thanks for all of your input on this, it's been really interesting seeing everybody's comments coming through. Alongside the Net Zero initiative that you have been discussing over the past few days, Thames Water has a number of other initiatives that they are aiming to achieve by the end of 2030, over and above the main provision of your water and sewerage services.
All of these initiatives could have a positive impact on improving both service and the environment, but they could also impact on your annual bill, as we have seen with the Net Zero initiatives.

Please take a look at the main extra initiatives that Thames Water could undertake over 2025-2030, and rank them in order of priority you think Thames Water should give them, for instance where you think Thames Water need to make the most improvements. So, the most important initiative for Thames Water to tackle should be no 1 and the least important initiative for them to tackle should be no 8.

(Randomise)

1.Achieving Net Zero carbon emissions for its water and waste operations
2.Replacing a number of large, aging water mains that could be dangerous if they burst (for example could flood nearby basements and underground stations)
3.Replacing large sections of aging water pipework in London, rather than fixing individual leaks as they happen
4.Helping any customers with lead pipes on their properties to replace those, to eliminate the risk of lead being in their water supplies
5. Increasing the capacity of the sewer network to prevent sewer overflows into homes and businesses
6. Reducing sewer overflows into rivers by improving sewage treatment works, aiming for the number of sewage spills to be lower than what the Environment Agency allows
7. Ensuring stretches of rivers are safe for swimming in, by preventing sewer overflows into rivers in those areas
8. Reducing the potential damage to rare types of rivers (like chalk streams) by reducing the amount of water taken from them and building pipelines to connect communities to other water sources instead

- Finally, please tell us briefly why you think they should prioritise the two most important initiatives that you have ranked above.

Appendix –
Trunk Mains & Replumb London discussion guide & stimulus

1.1 Welcome and introduction (1)

Over the next few days we want to share some information on the system of pipes that deliver drinking water to your home and ask your views on how you think Thames Water should manage that system in the future. We want to understand your views in detail as a bill paying customer.

Before we begin, we thought it would be important to tell you a bit more about this research.

Every five years, water and sewerage companies take part in what is known as a Price Review. During this process, water and sewerage companies plan out the activities they will undertake over a specified five-year period in terms of delivering for customers, and any impacts on the bill that their activities might have. These activities range from delivering customer services, managing the water and sewerage networks (including repairs and replacements), reducing carbon emissions, and making a difference in local communities (including the natural environment such as rivers and reservoirs). These five-year plans are presented to Ofwat, the water and sewerage industry regulator, which has the power to accept or reject each company's plans and proposed bill impacts. The current Price Review covers activities planned for the period 2025-2030.

Water and sewerage companies have a duty to consult with their customers about their plans, and to reflect this in submitting their plans to Ofwat.

This research is about one element of Thames Water's price review, specifically the management the of drinking water pipe network.

1.1 Welcome and introduction (1)

This research is about one element of Thames Water's price review, specifically the management the of drinking water pipe network.

We are looking for your feedback on Thames Water's plans in this area. All of your feedback will be taken account of in a report written by Verve, and decisions about what course of action Thames Water may take will be influenced by your comments. If you have any questions about this, please don't hesitate to drop us a line.

There will be quite a lot of information to read on this first day, but the next three days should take a little less time. We'd like you to understand the information we're going to show you so that you are able to give an informed view, while considering the issues involved.

For most of its drinking water customers Thames Water also has a role in removing wastewater and treating it. We are running another community focusing just on that role. In this community we want to focus exclusively on that role of delivering drinking water.

So first we want to get your overall view of Thames Water in its role of delivering drinking water to your house or business

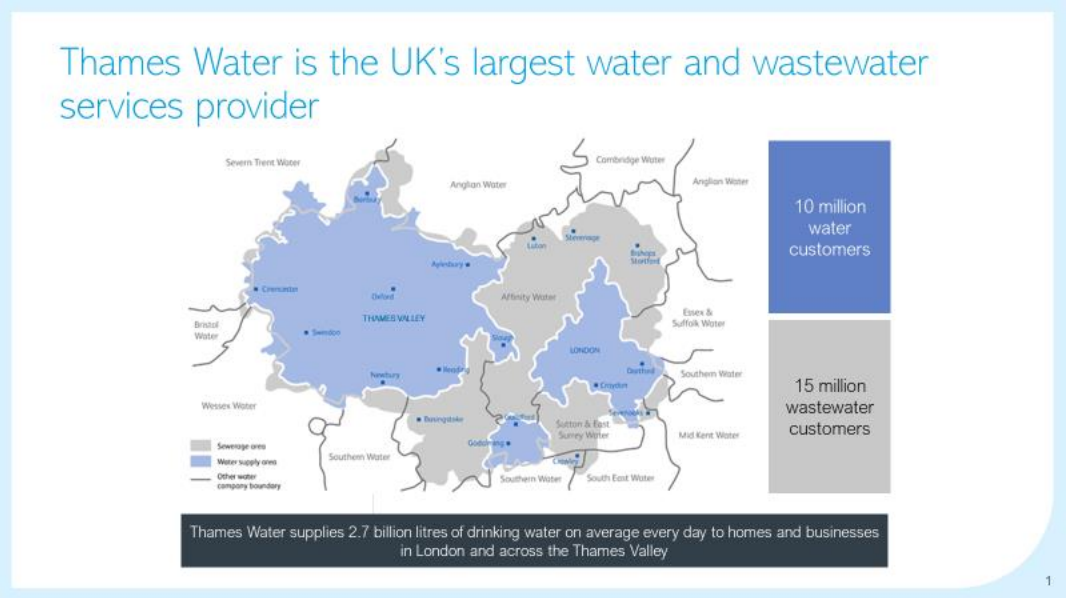
- What one word comes to mind first when you think about Thames Water's role in delivering drinking water to its customers
- What do you think they do well in this role?
- How would you want to see them improve in this role?

1.2 About this process (1)

You are being asked to give some early input into how Thames Water should manage the pipes that deliver water to customers over the next 5 year planning period (from 2025 onwards)

We will be sharing with you:

- Information about the current condition of those pipes and the challenges in managing them over this 5 year period (and further into the future) and asking what your priorities are for managing this network of pipes
- Thames Water's overall vision for how they propose to manage this water pipe network for the 5 year period starting in 2025 (and further into the future) and asking what you think of their plan
- A few different options for how Thames Water could manage their water pipe network and seeing which you would favour most and why



1.3 Introduction to the water network

Thames Water has a large network of water pipes to provide drinking water to its customers

Thames Water has around 31,000 km of water pipes. Two thirds of which are in London.

If all these pipes were laid end to end it would be able to get to Tokyo and back…and back to Tokyo again!

This network is made up of:

Trunk main pipes
10% of the water network

Distribution pipes
90% of the water network

In addition:

Customer pipes
around 18,000 km

2

Trunk main pipes

- These are the largest pipes, between 30 – 140cm in diameter
- They can operate under very high pressure and carry a lot of water from water treatment works to the distribution pipes
- They can cause a lot of disruption if they burst as the escaped water can flood areas very quickly, which could be dangerous for people in basement or underground locations
- They are under almost all the main roads in London and throughout the Thames Valley

Distribution pipes

- These carry water from the trunk main pipes to customer properties
- They are smaller than the trunk pipes at around 10 – 25cm in diameter
- There is a distribution pipe under almost every road in London and many residential roads in the Thames Valley

Customer pipes

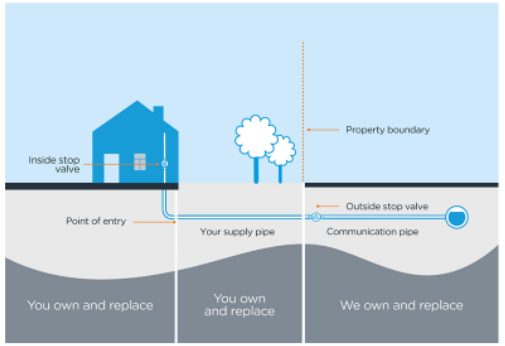
- These are around 1.5 – 2.5cm in diameter
- These are owned by customers, who are responsible for their repair
- However, Thames Water has a policy whereby they offer to fix some types of leaks on customer pipes for free

3

- When you think about the supply of water to your home/businesses what are your greatest concerns?
- And what would you want to see Thames Water doing to address your concerns?

Thames Water's responsibility and the customer's responsibility for pipes

- Thames Water is responsible for all pipes from the water treatment works up to the Outside Stop Valve which is outside of the customers property
- Pipes beyond that into the customer's property are the customer's responsibility to maintain
- For context – about 28% of leakage in the Thames Water area comes from leaks on customer properties



4

1.4 Challenges facing the network (1)

- What are your first impression of mains bursts in the Thames Water area?
- What would you want to see Thames Water prioritise in the future in tackling mains bursts like these?

Thames Water's water network is getting old!

Mains such as this one are still in use today…

- The average age of a Thames Water pipe across the whole water network is 80 years old
- In London, the trunk main network averages100 years old and 14% of mains are over 150 year old

5

What is a burst?

When a large mains pipe breaks it has a potentially catastrophic impact. As so much water can escape at once there is a chance of rapid flooding that could cause danger to life and damage to property, especially for lower level properties like basements, cellars and underground stations.
It can take several weeks or even months to replace mains, which can be highly disruptive to traffic, especially as mains tend to be located on main roads.
Bursts are caused by various things, including:

- Old or weak pipes
- Natural wear and tear on pipes
- Sudden heavy traffic causing movement in the ground
- Temperature and weather changes, which cause pipes or the surrounding ground to swell or shrink
- Extreme temperature changes causing water in pipes to freeze then thaw rapidly
- High water pressure or sudden changes in water pressure

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Currently the risks and additional disruption of a trunk mains burst are relatively infrequent

2012: A burst in Wick Lane (London) flooded the Central underground train line

2012: Regent St (London) closed for 2 weeks to replace a burst main

2009: Tooley St (London), property damage caused by a burst resulted in a £27 million insurance claim

2021: Hendon (London) 2 mains burst leaving many without water and closing a major road for days

- Thames Water might expect 3 of these large bursts in any one year

7

Case Study: Mains burst in Upper Street, Islington

At approximately 5 AM on the 5th of December 2016, a 36" cast iron main failed. This main was estimated to have been laid in the 1870s.

Inspection of the main following the event showed it to be in very poor condition, with severe corrosion.

Figure 1 - Burst Trunk Main from the Upper Street event

The burst resulted in flooding to a depth of 2m in basements of properties in Islington and the evacuation of about 100 people.

Figure 2 – Upper Street event featured in local and national new sources

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1.4 Challenges facing the network (2)

- What is your first impression of the leakage in the Thames Water area?
- What would you want to see Thames Water prioritise in the future in tackling leakage?

What is leakage?

Leakage is lost water – that's all the treated drinking water not making its way to customers. Most of this water leaks from older pipes, but sometimes it's stolen (using illegal standpipes), and a small amount is accounted for where we're just not as good as we should be at understanding how much properties are using when there's no water meter.
Leaks are caused by various things, including:

- Old or weak pipes
- Natural wear and tear on pipes
- Sudden heavy traffic causing movement in the ground
- Temperature and weather changes, which cause pipes or the surrounding ground to swell or shrink
- Extreme temperature changes causing water in pipes to freeze then thaw rapidly
- High water pressure or sudden changes in water pressure

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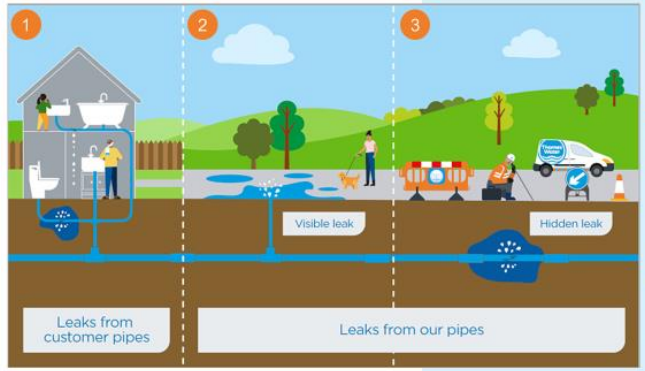
Different types of leak



1. Customer leaks
- 28% of leakage
- Thames Water encourages customers to check for and fix leaks
- Some leaks can go un-noticed (especially if not on a meter)

2. Visible leaks
- 2% of leakage
- Around 16,000 fixed per year
- Although leak flows can be high, they are fixed quickly, and therefore the total volume of water lost is relatively small

3. Hidden leaks
- 70% of leakage
- Around 30,000 of these are detected and repaired each year
- These are more difficult for Thames Water to find – various techniques and devices are used to detect these leaks

Currently around 23% of drinking water that is put into supply is lost through leakage. That's about 590 Million litres of water per day, equivalent of the amount of water used by almost 4 million people

Trunk main pipes account for 18% of leakage

Distribution pipes account for 54% of leakage

Customer pipes account for 28% of leakage

75% of leakage occurs in London where a quarter of the pipes are over a 100 years old

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Thames Water has been working to reduce bursts and leaks

1. Controlling water pressure

Reducing excess water pressure in the water pipe network reduces the amount of water being lost through leaks and reduces the frequency of bursts

2. Active leakage control

Thames Water monitor the water network to understand where hidden leaks are, find them and repair them

3. Targeted upgrading and replacing of pipes

Thames Water can upgrade pipes to reduce leakage, for example by re-lining weak pipes

When a pipe is too damaged to be upgraded it is completely replaced by digging up the road or in some cases by pushing a new pipe into the ground using new methods

In the last year these efforts have reduced the amount of water lost each day by 5%

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1.4 Challenges facing the network (3)

We now want to tell you a bit more about the difference between types of pipes, and why we are asking you to consider them separately.

- Looking at this information do you think Thames Water's future focus should be on improving …
  - Trunk mains
  - Distribution pipes
  - Both Equally
- What makes you say that?

We need to consider trunk mains and distribution pipes separately

	Trunk mains 	Distribution pipes 
Size	30 – 140cm in diameter	10-25cm in diameter
Proportion of network	10%	90%
Proportion of total bursts	2-3%	97-98%
Proportion of total leakage (excluding customer pipes)	25%	75%
Implications of a burst	• Potentially catastrophic impacts – risk of rapid flooding causing danger to life and damage to property, also many properties may lose their water supply for some time • Weeks or months to replace mains, highly disruptive • Locations are main roads, adding to disruption • Expensive, 10 times the cost per kilometre of distribution pipes	• Relatively minor impacts, some properties may lose their water supply for a short time • A few days of roadworks to repair or replace • Locations are minor roads, locally disruptive • Less expensive, a tenth of the cost per kilometre of trunk main
Summary	• Relatively lower chance of bursting or leaking but much higher impact – a health and safety risk	• Relatively higher chance of bursting or leaking but lower impact – a short term irritation to locals

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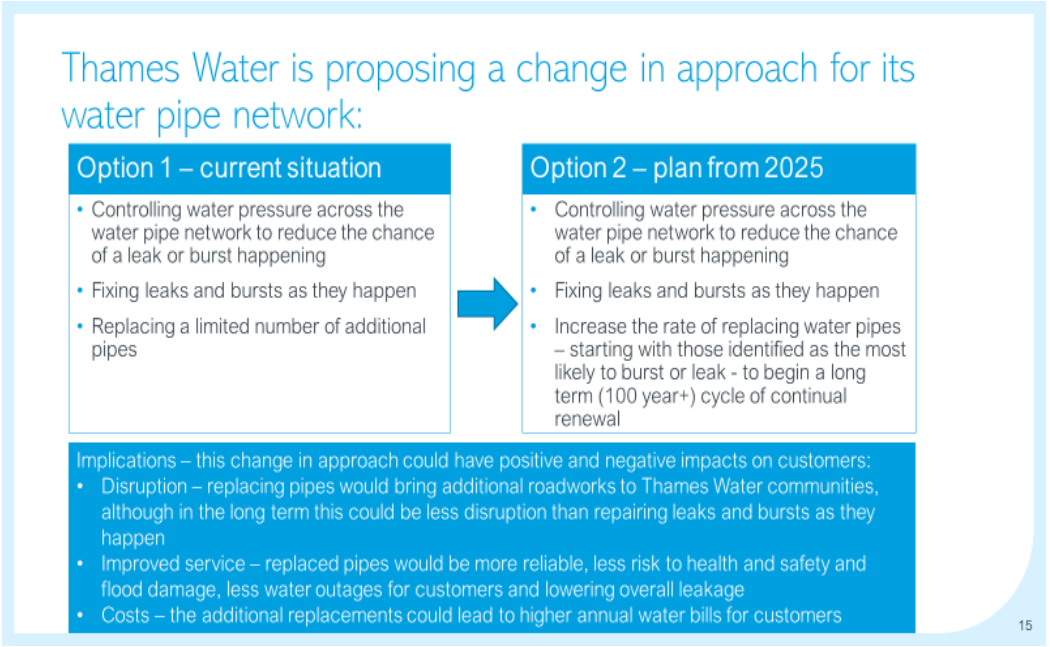
1.5 Looking ahead (1)

Issues with the water network are forecast to worsen in the coming years as the pipes age further

In the near future it is estimated that the amount of water pipe bursts and leaks will reach a point where the disruption involved in fixing them, including traffic measures, water supply interruptions and the leakage itself would result in an experience for customers that would be unacceptable, and the continued decline of the network.

- What would you like Thames Water to do in response to this likely future increase in bursts and leaks?

During 2025-2030 Thames Water would like to take a new approach to managing the network of water pipes it is responsible for.



1.5 Looking ahead (2)

We encourage you to download this information pack as a PDF, as you may want to refer to it in the coming days. You can do so here

At an overall level, and based on what you have heard so far, to what extent would you support or oppose this change in approach (option 2) – an increased replacement of water pipes (as well as fixing leaks and bursts when they happen and controlling water pressure):

- Support strongly
- Support
- Neither support nor oppose
- Oppose
- Oppose strongly

- What are your main reasons for that level of support/opposition?

2.1 Introduction to trunk main challenges (1)

Yesterday we learned about Thames Water's network of water pipes delivering drinking water to its customers including:

- The different pipes involved – Trunk mains and Distribution pipes
- The overall challenges facing the network – ageing pipes, leakage and bursts
- How Thames Water currently manage the water network – reducing leakage and the risk of bursts by managing water pressure
- And the benefits and costs to you as a customer of Thames Water's proposal to focus more on pro-active replacement of pipes

Again, if you have not downloaded the information pack we presented you with yesterday, you can do so here .

2.1 Introduction to trunk main challenges (2)

Today we are going to be focusing on Trunk Mains only (we will focus on Distribution pipes tomorrow).

PDF of slides shown to date

A reminder of how trunk mains and distribution pipes are different

Our focus for today

Trunk mains

- These are the largest pipes, between 30 – 140cm in diameter
- They can operate under very high pressure and carry a lot of water from water treatment works to the distribution pipes
- They can cause a lot of disruption if they burst, including rapid flooding and a danger to life especially for those in basement or underground locations
- They are under almost all the main roads in London and throughout the Thames Valley

Distribution pipes

- These carry water from the trunk mains to customer properties
- They are smaller than the trunk mains at around 10 – 25cm in diameter
- There is a distribution pipe under almost every road in London and many residential roads in the Thames Valley

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A reminder of why we need to consider these different pipes separately

	Trunk mains 	Distribution pipes 
Size	30 – 140cm in diameter	10-25cm in diameter
Proportion of network	10%	90%
Proportion of total bursts	2-3%	97-98%
Proportion of total leakage (excluding customer pipes)	25%	75%
Implications of a burst	• Potentially catastrophic impacts – risk of rapid flooding causing danger to life and damage to property, also many properties may lose their water supply for some time • Weeks or months to replace mains, highly disruptive • Locations are main roads, adding to disruption • Expensive, 10 times the cost per kilometre of distribution pipes	• Relatively minor impacts, some properties may lose their water supply for a short time • A few days of roadworks to repair or replace • Locations are minor roads, locally disruptive • Less expensive, a tenth of the cost per kilometre of trunk main
Summary	• Relatively lower chance of bursting or leaking but much higher impact – a health and safety risk	• Relatively higher chance of bursting or leaking but lower impact – a short term irritation to locals

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2.2 How trunk mains are managed today

With a network dominated by pipes over or approaching 100 years in age, replacement of Trunk Mains is inevitable at some point. How should Thames Water manage this?

As more mains pipes reach old age (some in London are even over 150 years old) it is estimated that the amount of mains pipe bursts will reach a point where the disruption involved in fixing them, including traffic measures, water supply interruptions and the leakage itself would result in an experience for customers that would be unacceptable, and the continued decline of the network.

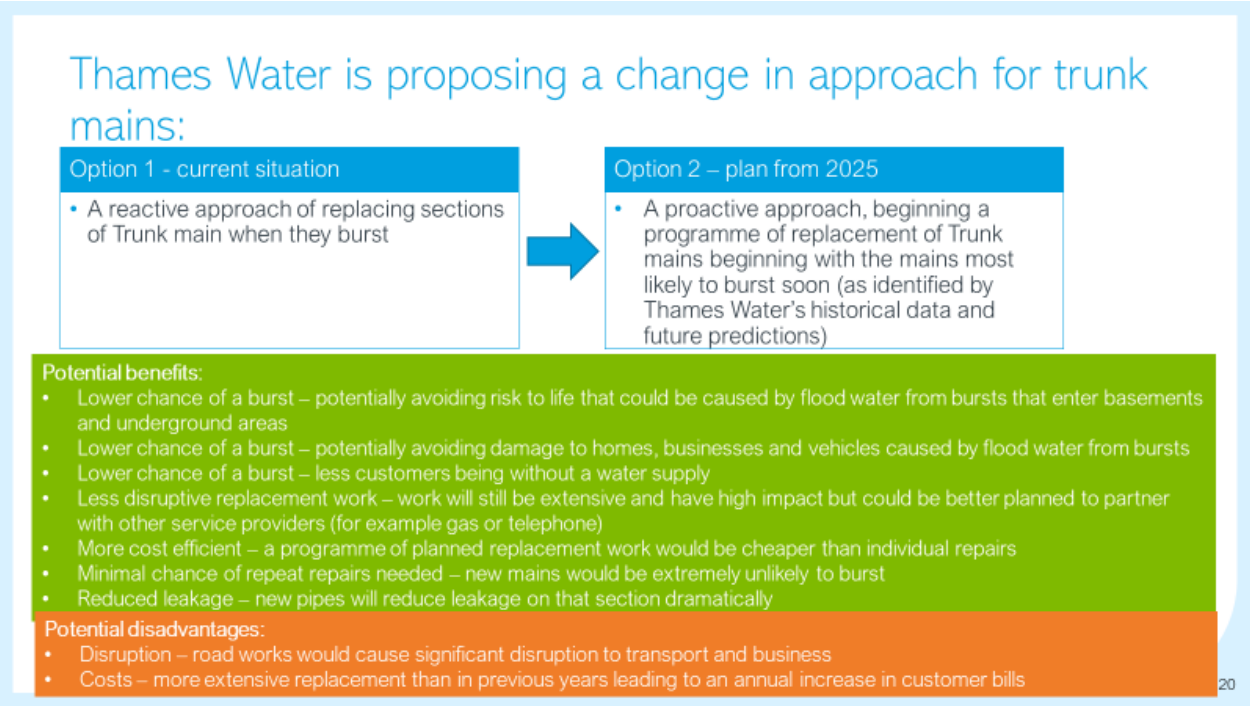
- What would you like Thames Water to do in response to this likely future increase in bursts?

2.3 Introduction to trunk mains proposal

During 2025-2030 Thames Water would like to take a new approach to managing the Trunk Mains it is responsible for.

- At an overall level, and based on what you have
  heard so far, to what extent would you support/
  oppose this change in approach:
  - Support strongly
  - Support
  - Neither support nor oppose
  - Oppose
  - Oppose strongly

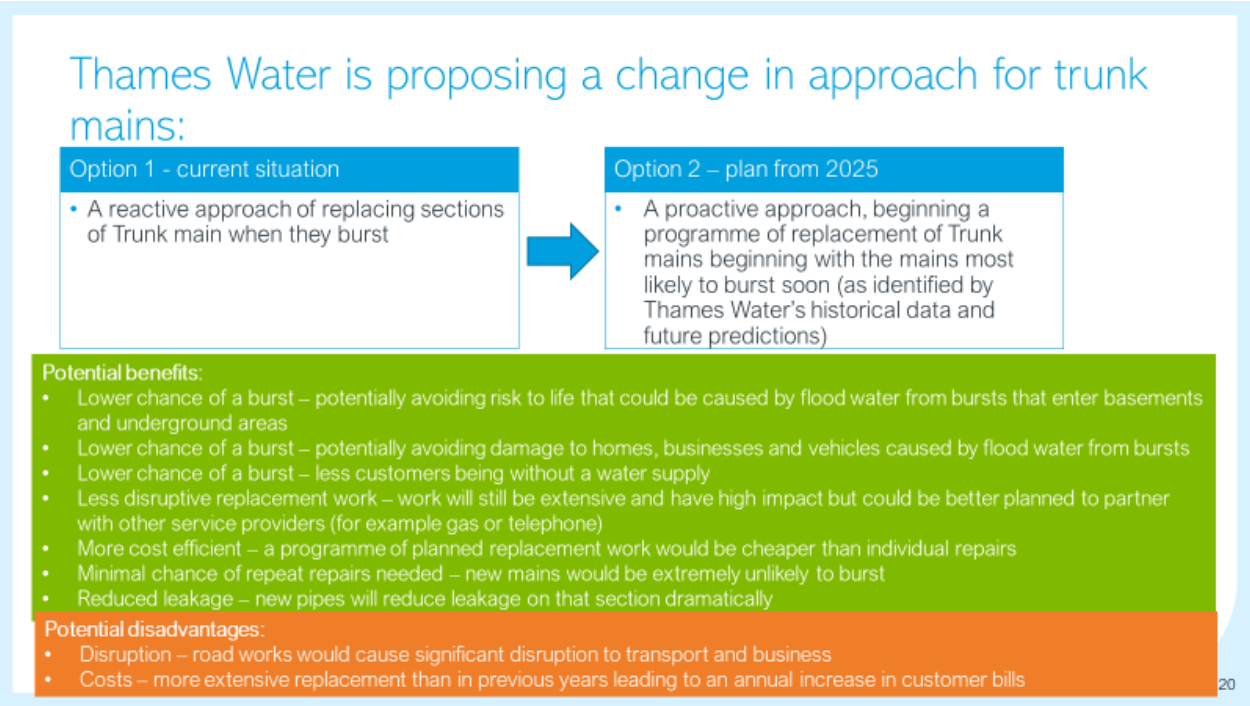
- What are your main reasons for that level of support/opposition?



3.1 Trunk main trade offs (1)

At the end of yesterday we were considering Thames Water's overall proposal for managing the Trunk mains it is responsible for.

Yesterday we asked simply to what extent you supported/opposed this proposal. Today we want to look at the potential benefits and disadvantages of this proposal.



3.1 Trunk main trade offs (2)

BENEFITS:

Regardless of how much you supported/opposed the proposal overall we want to understand which of these potential benefits you would see as most important.

- Please select the benefit(s) that is most important to you. You must select at least 1 (even if it not particularly important to you, just pick those you see as the strongest argument for taking this approach) and may select up to 3.
  - Lower chance of a burst – potentially avoiding risk to life that could be caused by flood water from bursts that enter basements and underground areas
  - Lower chance of a burst – potentially avoiding damage to homes, businesses and vehicles caused by flood water from bursts
  - Lower chance of a burst – less customers being without a water supply
  - Less disruptive replacement work – work will still be extensive and have high impact but could be better planned to partner with other service providers (for example gas or telephone)
  - More cost efficient – a programme of planned replacement work would be cheaper than individual repairs
  - Minimal chance of repeat work needed – new mains would be extremely unlikely to burst
  - Reduced leakage – new pipes will reduce leakage on that section dramatically
- Why did you pick that/those benefit(s)? – please write a little about each separately
- What information might make these benefits more relevant to you?
- Are there any other benefits you can think of that would be important to you?

3.1 Trunk main trade offs (3)

DISADVANTAGES:

Regardless of how much you supported/opposed the proposal overall we want to understand which of these potential disadvantages you would see as most important.

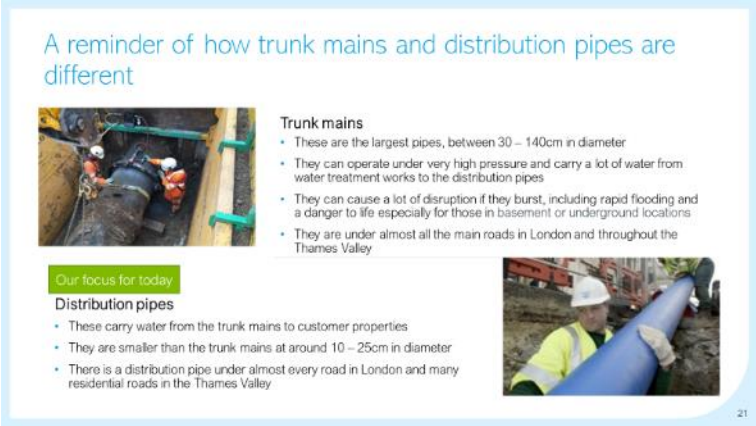
- Please select the disadvantage(s) that is most important to you. You must select at least 1 (even if it not particularly important to you, just pick the one you see as the strongest argument for opposing this approach), you may select both.
  - Disruption – road works would cause significant disruption to transport and business
  - Costs – more extensive replacement than in previous years leading to an annual increase in customer bills
- Why did you pick that/those disadvantage(s)? – please write a little about each separately
- What information might make these disadvantages more relevant to you?
- Are there any other disadvantages that you can think of that would be important to you?

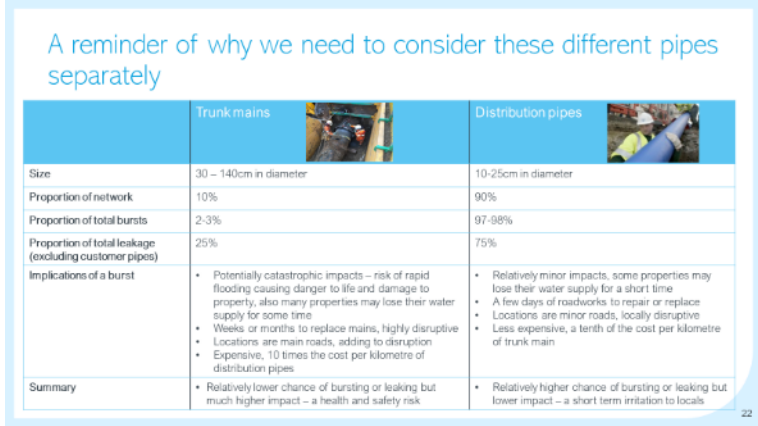
3.2 Testing scenarios

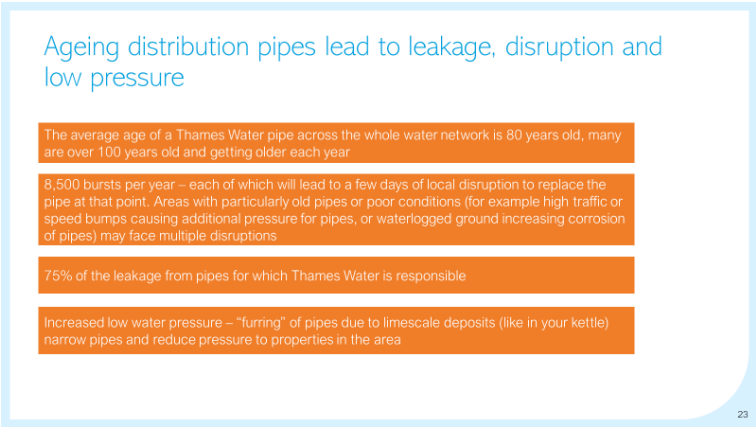
- We are now going to show you 3 potential scenarios for how Thames Water might manage the Trunk Main network during 2025-2030:
  - Maintain the responsive approach to replacing mains when they burst
  - Low increase in proactive replacement by replacing mains identified as most at risk of bursting
  - High increase in proactive replacement by replacing mains identified as most at risk of bursting
- From these we want you to show us which is closest to your favoured approach based on the potential benefits and cost to you (from what we've shown to you so far). You may decide to place your view as being between 2 of these scenarios if that best represents your view
  - Favour to maintain responsive replacement when mains burst
  - Favour low increase in proactive replacement of mains
  - Favour higher increase in proactive replacement of mains
- Please describe why you have decided to place yourself there on the scale?
- What information might make you more likely to support a higher level of replacement?
- What information might lead you to favour a lower level of replacement?
- Is there anything else that you would want to know before making a decision?

3.3 Introduction to the distribution pipe challenges

Now we move on to discuss Distribution pipes, which are the smaller pipes that take water from the Trunk Mains to customer properties. So, again a quick reminder of what we are discussing…







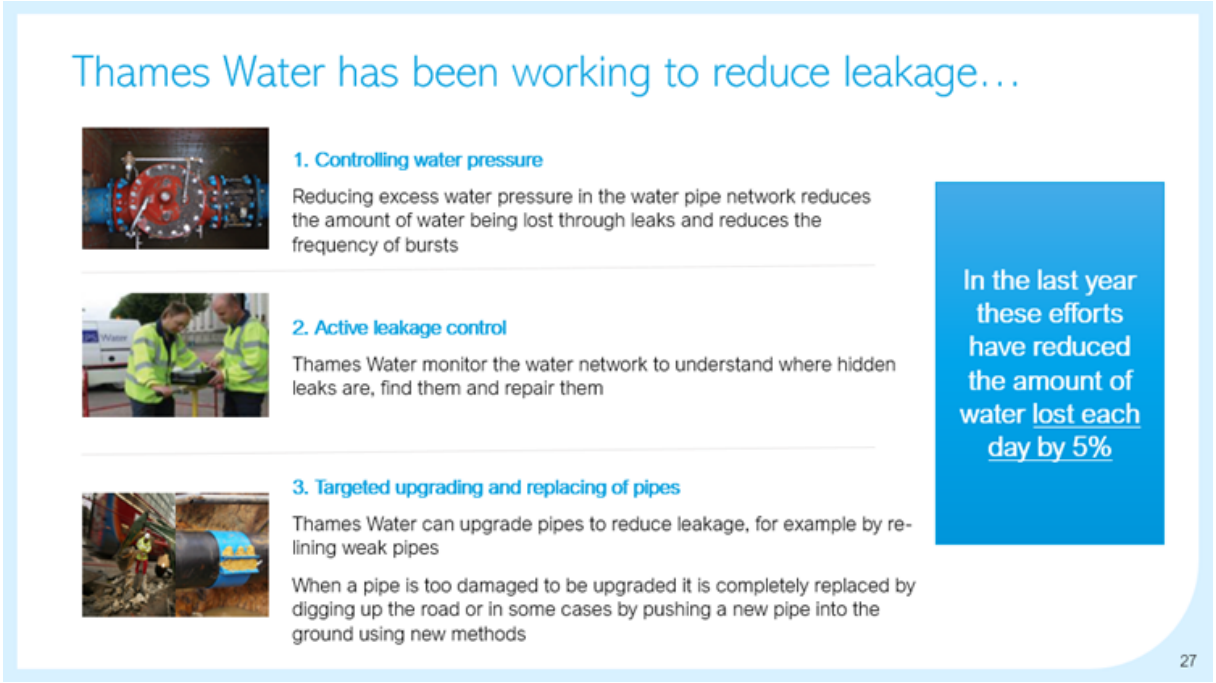
Tomorrow we will look at how distribution pipes are managed currently and discuss Thames Water's proposals for how to manage them in the future

4.1 Outlining current approach to distribution pipes (1)

Yesterday we learned about some of the issues facing the network of distribution pipes. This comes down to essentially one factor – age. Let's remind ourselves of some key facts:

- Average age of a Thames Water pipe across the whole water network is 80 years old, many are over 100 years old and getting older each year
- 8,500 bursts a year – each leading to a few days of disruption to local communities
- Accounts for 75% of leakage from pipes for which Thames Water is responsible
- "Furring" of pipes can lead to low pressure for customers

The issue of ageing Distribution Pipes is not new. Thames Water have been aware of its implications for several decades and been taking steps to prevent their impact



4.1 Outlining current approach to distribution pipes (2)

These activities have been relatively successful in preventing the worst effects of these ageing pipes and extending their life. However, there is now less scope to reduce leakage and bursts using these methods.

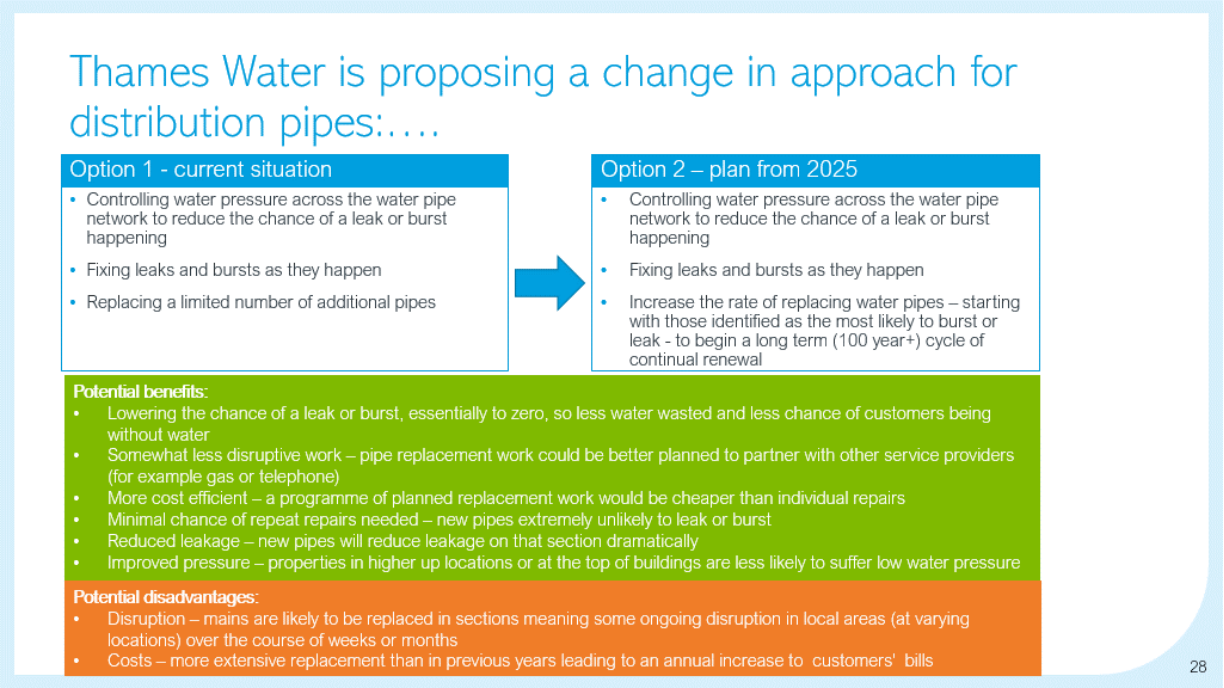
In the near future it is estimated that the amount of water pipe bursts and leaks will reach a point where the disruption involved in fixing them, the potential water supply outages for customers, the additional leakage, this could result in an experience for customers that may become unacceptable.

- How would you rate Thames Water's performance in maintaining the network of distribution pipes?
  - Very good
  - Quite good
  - Average
  - Quite poor
  - Very poor
- Why do you say that?
- What would you want to see Thames Water prioritise in the future in maintaining the network of distribution pipes?

4.2 Introduction to the distribution pipe proposal

During 2025-2030 Thames Water would like to take a new approach to maintaining the Distribution pipes it is responsible for.

- At an overall level, and based on what you have heard so far, to what extent would you support/oppose this change in approach:
  - Support strongly
  - Support
  - Neither support nor oppose
  - Oppose
  - Oppose strongly
- What are your main reasons for that level of support/opposition?



4.3 Distribution pipes tradeoff (1)

BENEFITS:

Regardless of how much you supported/opposed the proposal overall, we want to understand which of these potential benefits you would see as most important.

- Please select the benefit(s) that is most important to you. You must select at least 1 (even if it not particularly important to you just pick the one you see as the strongest argument for taking this approach), you may select up to 3.
  - Lowering the chance of a leak or burst, essentially to zero, so less water wasted and less chance of customers being without water
  - Somewhat less disruptive work – pipe replacement work could be better planned to partner with other service providers (for example gas or telephone)
  - More cost efficient – a programme of planned replacement work would be cheaper than individual repairs
  - Minimal chance of repeat work needed – new pipes extremely unlikely to leak or burst
  - Reduced leakage – new pipes will reduce leakage on that section dramatically
  - Improved pressure – properties in higher up locations or at the top of buildings are less likely to suffer low water pressure
- Why did you pick that/those benefit(s)? – please write a little about each separately
- What information might make these benefits more relevant to you?
- Are there any other benefits that you can think of that would be important to you?

4.3 Distribution pipes tradeoff (2)

DISADVANTAGES:

Regardless of how much you supported/opposed the proposal overall we want to understand which of these potential disadvantages you would see as most important.

- Please select the disadvantage(s) that is most important to you. You must select at least 1 (even if it not particularly important to you just pick the one you see as the strongest argument for opposing this approach), you may select both.
  - Disruption – mains are likely to be replaced in sections meaning some ongoing disruption in local areas (at varying locations) over the course of weeks or months
  - Costs – more extensive replacement than in previous years leading to an annual increase to customers' bills
- Why did you pick that/those disadvantage(s)? – please write a little about each separately
- What information might make these disadvantages more relevant to you?
- Are there any other disadvantages that you can think of that would be important to you?

4.4 Testing scenarios

- We are now going to show you 3 potential scenarios for how Thames Water might manage the Distribution pipe network during 2025-2030:
  - Maintain the responsive approach to replacing pipes when they leak or burst
  - Low increase in proactive replacement by replacing pipes identified in areas with more leaks and bursts
  - High increase in proactive replacement by replacing pipes identified in areas with more leaks and bursts
- We want you to show us which is closest to your favoured approach based on the potential benefits and cost to you (from what we've shown to you so far). You may decide to place your view as being between 2 of these scenarios if that best represents your view
  - Favour to maintain responsive replacement when pipes leak or burst
  - Favour low increase in proactive replacement of pipes
  - Favour high increase in proactive replacement of pipes
- Please describe why you have decided to place yourself there on the scale?
- What information might make you more likely to support a higher level of replacement?
- What information might lead you to favour a lower level of replacement?
- What else might you want to know before making a decision?

4.5 Wider context and final thoughts

Thanks for all your input on this, it has been interesting seeing everybody's comments coming through. Alongside the Trunk main and Distribution pipe initiative that you have been discussing over the past few days, Thames Water has several other initiatives that they are aiming to achieve by the end of 2030, over and above the main provision of your water and sewerage services.

All these initiatives could have a positive impact on improving both service and the environment, but they could also impact on your annual bill.

- Please look at this list of the main extra initiatives that Thames Water could undertake over 2025-2030 and rank them in order of priority you think Thames Water should give them, for instance where you think Thames Water need to make the most improvements. So, the most important initiative for Thames Water to tackle should be no 1 and the least important initiative for them to tackle should be no 8.
  - Achieving Net Zero carbon emissions for its water and waste operations
  - Replacing a number of large, aging water mains that could be dangerous if they burst (for example could flood basements and underground stations)
  - Replacing large sections of aging water pipework in London, rather than fixing individual leaks as they happen
  - Helping customers with lead pipes on their properties to replace those, to eliminate the risk of lead being in their water supplies
  - Increasing the capacity of the sewer network to prevent sewer overflows into homes and businesses
  - Reducing sewer overflows into rivers by improving sewage treatment works, aiming for the number of these sewage spills to be lower than what the Environment Agency allows
  - Ensuring stretches of rivers are safe for swimming in, by preventing sewer overflows into rivers in those areas
  - Reducing the potential damage to rare types of rivers (like chalk streams) by reducing the amount of water taken from them and building pipelines to connect communities to other water sources instead
- Finally, please tell us (briefly in a sentence or two) why you think they should prioritise the two most important initiatives that you have ranked above. Added words and a few other tweaks , as per Net Zero

Appendix –
Waste headroom, River Spills & Bathing Water discussion guide & stimulus

1.1 Welcome

Welcome to your first activity.

Over the next few days we want to share some information on the wastewater network that removes sewage and other wastewater from homes and businesses and ask your views on how you think Thames Water should manage that system in the future. We want to understand your views in detail as a bill paying customer.

Before we begin, we thought it would be important to tell you a bit more about this research.

Every five years, water and sewerage companies take part in what is known as a Price Review. During this process, water and sewerage companies plan out the activities they will undertake over a specified five-year period in terms of delivering for customers, and any impacts on the bill that their activities might have. These activities range from delivering customer services, managing the water and sewerage networks (including repairs and replacements), reducing carbon emissions, and making a difference in local communities (including the natural environment such as rivers and reservoirs). These five-year plans are presented to Ofwat, the water and sewerage industry regulator, which has the power to accept or reject each company's plans and proposed bill impacts. The current Price Review covers activities planned for the period 2025-2030.

Water and sewerage companies have a duty to consult with their customers about their plans, and to reflect this in submitting their plans to Ofwat.

This research is about one element of Thames Water's price review, specifically the wastewater network.

1.1 Welcome (cont'd)

We are looking for your feedback on Thames Water's plans in this area. All of your feedback will be taken account of within a report written by Verve, and decisions about what course of action Thames Water may take will be influenced by your comments. If you have any questions about this, please don't hesitate to drop us a line.

There will be some information to show you along the way, and we'd ask you to read this carefully. We'd like you to understand the information presented so that you are able to give an informed view, while considering the issues involved.

In this instance, we will be talking about the network that removes wastewater and sewage from homes, businesses and other public areas, and we'd like you to focus on that. We have covered the network that delivers clean water to home and businesses in another research community.

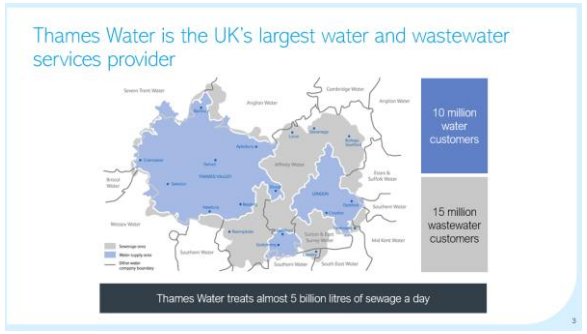
So first we want to get your overall view of Thames Water in its role in removing and treating sewage and wastewater from homes, businesses and other public areas.

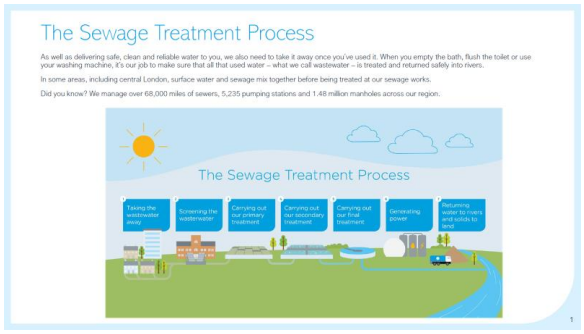
- What one word comes to mind first when you think about Thames Water's role in removing and treating sewage and wastewater?
- What do you think they do well in this role?
- How would you want to see them improve in this role?

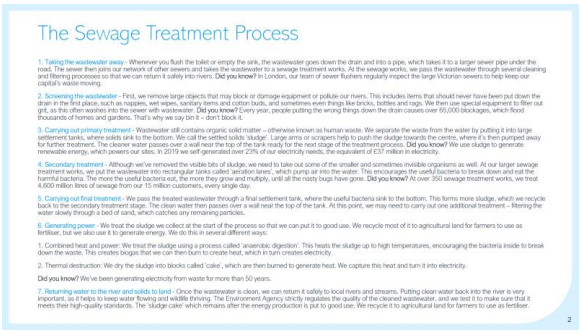
1.2 An introduction to the wastewater network

First of all, we'd like you to take a look at the following information pages; please read each in detail.

Firstly, we want to remind you of the area that Thames Water serves and to show you how the wastewater network operates, from sewage and wastewater leaving homes and businesses right through to it being treated and returned safely to rivers and other waterways.







You are being asked to give some early input into how Thames Water should manage the wastewater network over the next 5-year period (beginning in 2025). We will be:

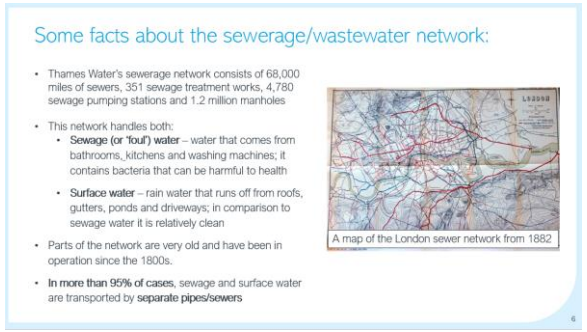
- Sharing with you some information about what can happen when the sewage network becomes overwhelmed, and asking about your priorities for addressing specific issues over the next 5 years (and further into the future)
- Sharing Thames Water's overall vision for how they would like to manage this network over the next 5 years (and further into the future) and asking what you think of them
- Sharing a few different options for how they could manage the network and seeing which you would favour most and why

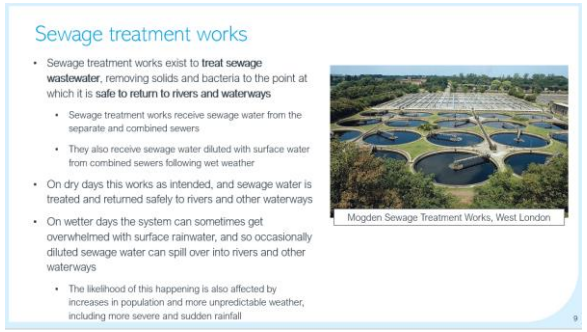
We'd now like you to answer the following question:

- Are there any specific challenges in the wastewater network that you are aware of at present? What are they?

1.3 Introduction to sewers and how they work

Now that you have learnt about what happens to sewage and wastewater when it leaves your property, we want to show you some more information about sewers and how they work.





- Have you heard or read anything about wastewater networks and the treatment of sewage in recent times?
- When you think about the removal of sewage and wastewater from your property, do you have any particular concerns?
- Have you ever experienced any issues with regard to sewage or surface water at or near your property? What happened and how did it affect you?
- And what would you want to see Thames Water doing to address your concerns?

1.4 Challenges facing the network

Sewers can flood for a number of reasons, and this can result in some very unpleasant incidents, in particular the following:

For each:

- Have you heard of or experienced any issues like this?
- How did it affect you?

- What are your first impression of the problems that can be caused by sewer flooding?
- How seriously do you think Thames Water should be taking these incidents?
- Which of the types of incidents above do you think Thames Water should focus on preventing most? Why do you say that?

1.5 Why does sewer flooding happen?

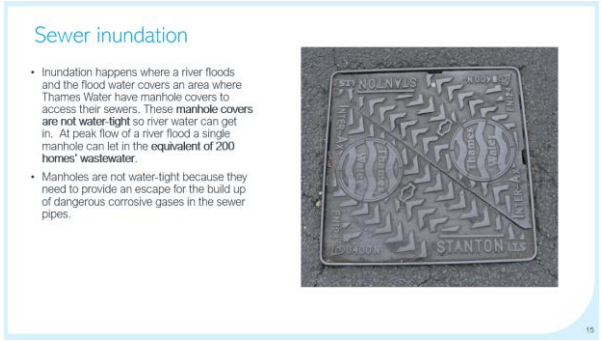
We now want to show you the various causes of sewer flooding

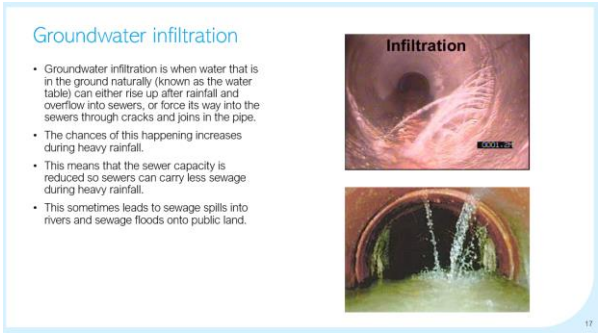
Please watch the following short video which provides an overview of sewer flooding:

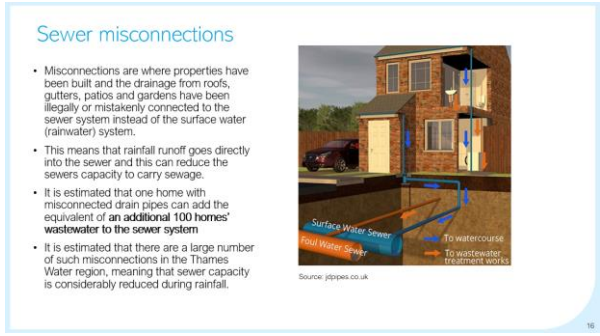
https://www.youtube.com/watch?v=DGXzVE_izGo

- Is there anything in the video that you were not aware of?
- Does the video make you think about what Thames Water should be doing to prevent sewer flooding?

Finally, we want to explain the causes of sewer flooding in more detail, please read the following slides carefully.







- Does any of this information surprise you?
- As a customer, which of the various causes of sewer flooding and sewer spills would you like to see Thames Water prioritise tackling in reducing the number of sewer flooding incidents?

Outline of objectives of the discussion guide

Waste headroom

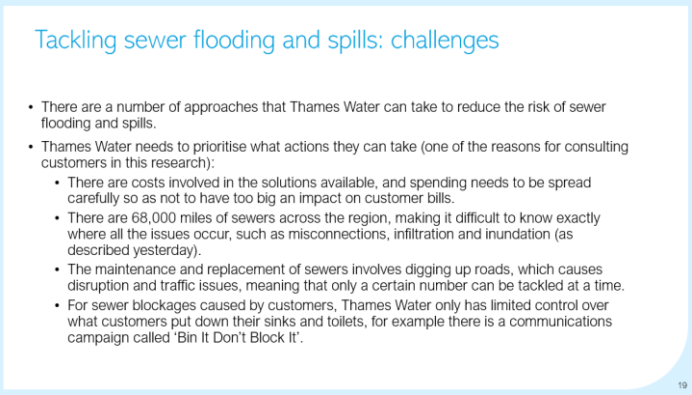
- What are customer's attitudes towards sewer flooding?
- How well do they understand the difference between sewer flooding and other sources of flooding e.g. river Highway etc. should we differentiate?
- Is there support for upgrading the sewer network capacity to reduce the number of households and businesses at risk of sewer flooding?
- Is there support for the methods we'll use for achieving this?
- Green engineering vs grey solutions

2.1 Solutions and tackling the issues

Thanks for all your responses yesterday looking at the wastewater network and the causes of sewer flooding and sewage spills.

Thames Water has an ongoing programme of activity aimed at reducing the risk of sewage flooding and spills and now wants to consult with customers to understand your priorities and how you think Thames Water should continue to tackle this, starting with for the 5 year period beginning in 2025.

Please read the following slides in detail.



Tackling sewer flooding and spills: challenges

- There are a number of approaches that Thames Water can take to reduce the risk of sewer flooding and spills.
- Thames Water needs to prioritise what actions they can take (one of the reasons for consulting customers in this research):
  - There are costs involved in the solutions available, and spending needs to be spread carefully so as not to have too big an impact on customer bills.
  - There are 68,000 miles of sewers across the region, making it difficult to know exactly where all the issues occur, such as misconnections, infiltration and inundation (as described yesterday).
  - The maintenance and replacement of sewers involves digging up roads, which causes disruption and traffic issues, meaning that only a certain number can be tackled at a time.
  - For sewer blockages caused by customers, Thames Water only has limited control over what customers put down their sinks and toilets, for example there is a communications campaign called 'Bin It Don't Block It'.

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Reducing sewer flooding in customer properties

- Progress in tackling sewer flooding is measured by the risk or likelihood of a property experiencing a sewer flood.
  - Last year approximately **150 properties experienced sewer flooding** in the Thames Water area, out of 6 million properties there.
  - However around 1,500 properties across the region are in an area where heavy rainfall could put them at risk of sewer flooding inside their property.
- **Thames Water are aiming to end all sewer flooding to properties by 2050**, so over the coming years they plan to make improvements to the sewer network so that fewer and fewer properties experience sewer flooding. However the work required to make this improvement could have an impact on customer bills.
- Another factor to bear in mind is the *level* of protection that various improvements can bring in the near future, for example:
  - *A certain amount of money could be spent in 2025-2030 to give 50 at-risk properties a SIGNIFICANT reduction in the risk of sewer flooding.*
  - *The same amount of money could be spent in 2025-2030 to give 150 at-risk properties a SOMEWHAT reduced risk of sewer flooding.*

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You can now download all the information slides to date from **here.** You may want to reference them in considering the questions for the remainder of the day's activities.

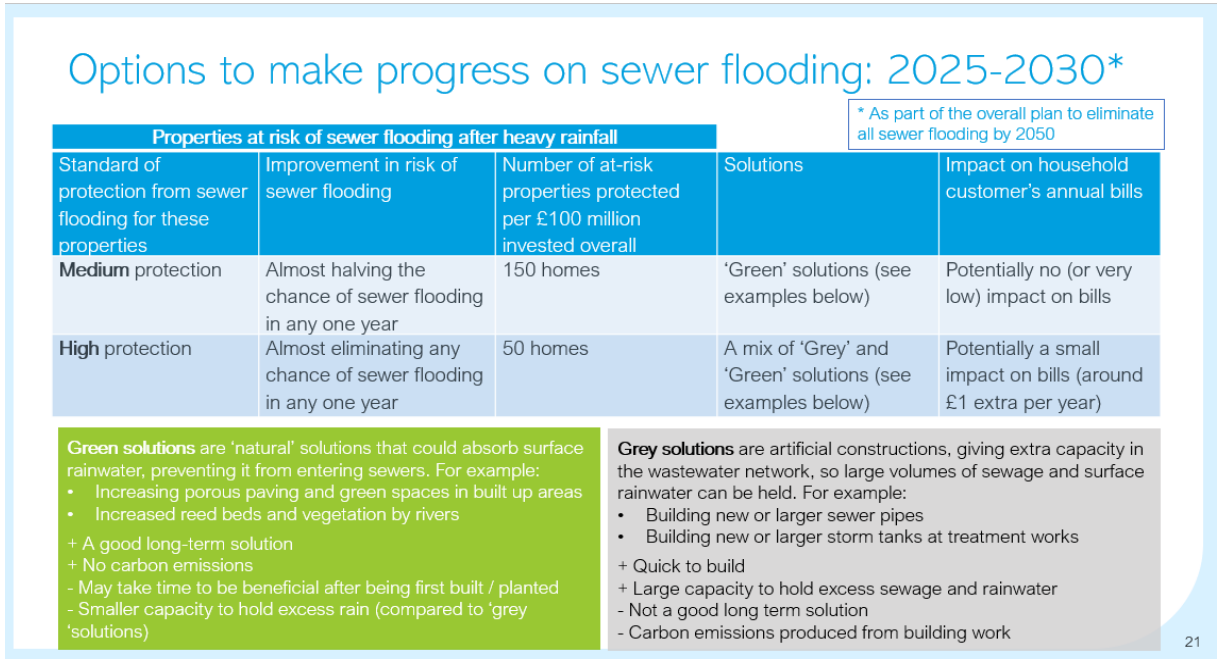
- Considering this information, what do you think Thames Water's approach should be? Which of these should they focus on?
  - Significantly reducing the risk for a smaller number of properties?
  - Somewhat reducing the risk for a greater number of properties?
- What else would you need to know in order to be able to make a decision?

2.2 Solutions and tackling the issues

We are now going to show you two potential scenarios for how Thames Water might start to tackle the reduction in sewer flooding during 2025-2030. Here you can see information on the various options available, and the extent to which each option will reduce sewer flooding for properties.

There is information on the impact each solution might have on annual customer bills. For context, the average household bill for Thames Water customers was £418 in 2021-22, so that amount may have been higher or lower for different customers (depending on things like having metered water).

Also, do keep in mind that Thames Water have other initiatives as well as sewer flooding to tackle in the future which might also impact the bill (for example other actions to ensure a reliable water & wastewater service and to protect the environment).



Options to make progress on sewer flooding: 2025-2030*

* As part of the overall plan to eliminate all sewer flooding by 2050

Properties at risk of sewer flooding after heavy rainfall				
Standard of protection from sewer flooding for these properties	Improvement in risk of sewer flooding	Number of at-risk properties protected per £100 million invested overall	Solutions	Impact on household customer's annual bills
Medium protection	Almost halving the chance of sewer flooding in any one year	150 homes	'Green' solutions (see examples below)	Potentially no (or very low) impact on bills
High protection	Almost eliminating any chance of sewer flooding in any one year	50 homes	A mix of 'Grey' and 'Green' solutions (see examples below)	Potentially a small impact on bills (around £1 extra per year)

Green solutions are 'natural' solutions that could absorb surface rainwater, preventing it from entering sewers. For example:
- Increasing porous paving and green spaces in built up areas
- Increased reed beds and vegetation by rivers

\+ A good long-term solution
\+ No carbon emissions
\- May take time to be beneficial after being first built / planted
\- Smaller capacity to hold excess rain (compared to 'grey 'solutions)

Grey solutions are artificial constructions, giving extra capacity in the wastewater network, so large volumes of sewage and surface rainwater can be held. For example:
- Building new or larger sewer pipes
- Building new or larger storm tanks at treatment works

\+ Quick to build
\+ Large capacity to hold excess sewage and rainwater
\- Not a good long term solution
\- Carbon emissions produced from building work

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2.2 Solutions and tackling the issues (contd.)

Now that we have described the types of solutions on offer, we want you to show us which is closest to your favoured approach based on the potential benefits and cost to you (based on what we've shown to you so far). You may decide to place your view as being between 2 of these scenarios if that best represents your view

Please state clearly whether you favour:

1) The medium protection option
2) The high protection option
3) An option midway between the two

- Please describe why you have decided to place yourself there on the scale?
- What information might make you more likely to favour the medium protection option?
- What information might make you more likely to favour the high protection option?
- Is there anything else that you would want to know before making a decision?

Outline of objectives of the discussion guide

River spills

- What is customers' usage of/views on the importance of their local environment?
- What are customers' attitudes to our ambition to reducing our river spills?
- How quickly should we reduce river spills (if at all) and at what pace?
- Is it more critical to focus on the length of time we spill versus the number of times? In 2020 we spilled for some 200,000 hours compared to c.18,000 separate occasions. Duration of spill can in some instances have more lasting impact on the river wellbeing.
- Are there any circumstances where river spills would be acceptable?
- Are opinions different among those who live closer to or use rivers?

3.1 Use of rivers, lakes and canals

Thanks for all your responses yesterday looking at the wastewater network and the causes of sewer flooding and sewage spills.

Today we want to look at the issue of river quality, and get feedback on the pace which Thames Water could tackle the issue of improving the quality of rivers, lakes and canals by reducing the frequency of sewage spills.

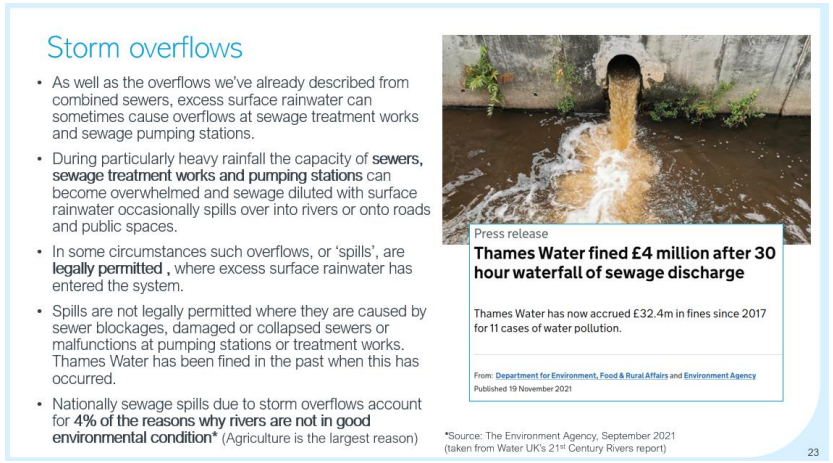
First of all, we'd like to talk about how close you live to any rivers, lakes and canals, how often you use them, and for what purpose.

- How important is the natural environment to you personally? By which we mean access to green spaces and waterways?
- What bodies of water (rivers, lakes or canals) would you say are closest to you?
- How often do you visit each of these rivers, lakes or canals and for what purpose?
  - It could be for walks, fishing or other water activities such as swimming, canoeing, kayaking or paddleboarding
  - Please tell us about your activities and how important they are to you
- How important (or not) is it to you that these bodies of water are clean and unpolluted?
- Do you have any specific concerns about the pollution of the bodies of water that you live nearest to? What are the issues and why are you concerned?

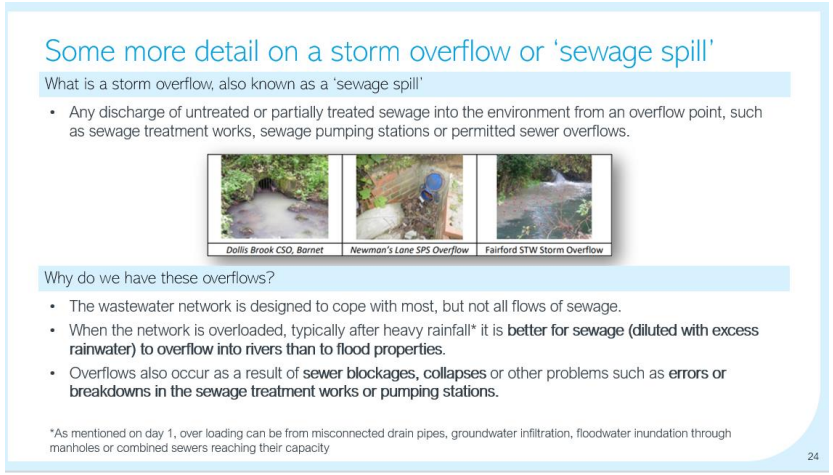
3.2 Background on river spills

We're now going to show you some information about what can affect water quality in rivers, lakes and canals.

You have already seen information on 'storm overflows' – here it is again:



We now want to show you some more detailed information about storm overflows and sewage spills into rivers, lakes and canals:

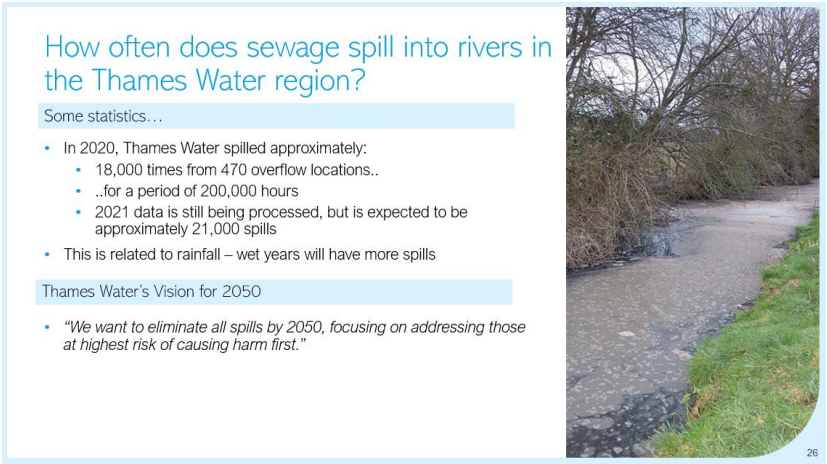


- What are your first reactions to the information that you have read here? Does anything surprise you?
- What other information would you want to know in thinking about how Thames Water should be tackling this issue?

3.2 Background on river spills

- What are your reactions to the information that you have read here? Does anything surprise you?
- In your view are there any circumstances in which sewage spills into rivers, lakes and canals should be permitted?

- What are your reactions to the information that you have read here?
- What is your reaction to the number of spills in 2020 and 2021? Is it more or less than you expected?
- What is your view of Thames Water's ambition to 'eliminate all spills by 2050'?
- What is your view on the speed at which Thames Water plans to reduce spills?

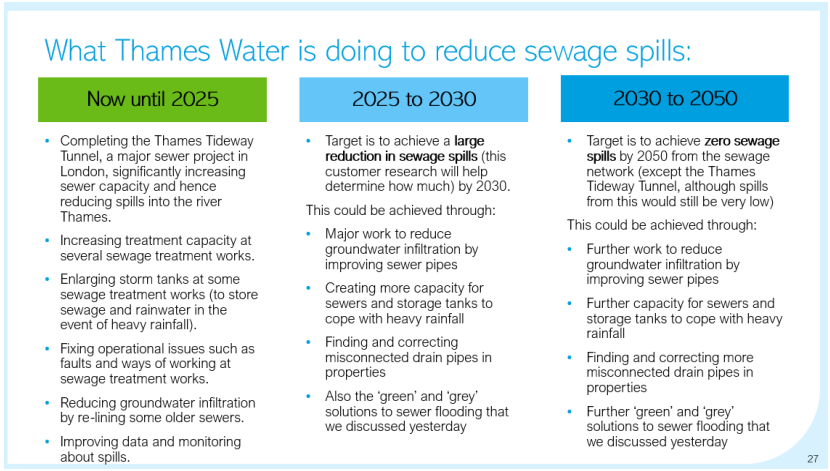


3.3 Thames Water's plans for reducing the number of sewage spills

For the final exercise today, we'd like to get your input on the speed at which you think Thames Water should be attempting to reduce sewage spills in the period 2025-2030.

You can download a pack with all of the information we previously showed you on rivers **here** if you wish to refer to it while you answer the next questions.

Here you can see what Thames Water is currently doing to reduce sewage spills and what it has planned from now 2030 and further to 2050.



- What are your reactions to this information?
- Is there anything that surprises you or that you wish to comment on?
- What is your view of Thames Water aiming to reduce spills by 50% by 2030? Is this right, too much or not enough? Is there anything else that Thames Water should be doing?

There are a number of approaches Thames Water could take in terms of reducing sewage spills, each reaching a different level of reduction.

There is information on the impact each solution might have on annual customer bills. For context, the average household bill for Thames Water customers was £418 in 2021-22, so that amount may have been higher or lower for different customers (depending on things like having metered water).

Also, do keep in mind that Thames Water have other initiatives as well as sewage spills to tackle in the future which might also impact the bill (for example other actions to ensure a reliable water & wastewater service and to protect the environment).

3.3 Thames Water's plans for reducing the number of sewage spills

- Which of the options outlined would be your preferred method for Thames Water to tackle sewage spills and improve water quality in rivers, lakes and canals?
- Why did you choose that option?
- What information was most important to you in making that decision?

Now thinking about a fact that we've previously mentioned...

Most sewage spills are heavily diluted by excess rainwater and the spills usually enter rivers when they're flowing quickly after high rainfall. Therefore the impact on the environment can be very low. In less than 1% of cases a sewage spill can have very damaging effects to the environment, wildlife and river users.

Trying to reduce the majority of sewage spills (the heavily diluted ones that enter quick flowing rivers), could therefore involve spending money on solutions that offer no real environmental benefit.

- Do you feel Thames Water should aim to reduce these types of sewage spill, as well as the type of sewage spill that cause environmental harm?
- What are the reasons for the answer you have given?

Options for reducing sewage spills between 2025 and 2030

	Option 1: **25%** less sewage spills into rivers (reduced by a quarter)	Option 2: **50%** less sewage spills into rivers (reduced by half)	Option 3: **75%** less sewage spills into rivers (reduced by three quarters)	Option 4: **100%** less sewage spills into rivers (reduced to NO spills)
Likely type and scale of solution to reduce sewage spills	Finding and correcting 250 misconnected drain pipes in properties Reducing groundwater infiltration by improving 100 sewer pipes	Finding and correcting 500 misconnected drain pipes in properties Reducing groundwater infiltration by improving 200 sewer pipes Creating more capacity in sewers, treatments works and storm tanks at 130 locations	Finding and correcting 750 misconnected drain pipes in properties Reducing groundwater infiltration by improving 300 sewer pipes Creating more capacity in sewers, treatments works and storm tanks at 200 locations	Finding and correcting 1000 misconnected drain pipes in properties Reducing groundwater infiltration by improving 400 sewer pipes Creating more capacity in sewers, treatments works and storm tanks at 270 locations
Additional annual cost per household bill	£1.80	£4.50	£ 7.30	£10.90

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3.3 Thames Water's plans for reducing the number of sewage spills

Finally for today, we've been talking about Thames Water's plans for 2025-2030 to improve sewer flooding and sewage spills. They have ambitious targets for the longer term too, looking ahead to 2050 they aim to:

- End all sewer flooding in homes, gardens and businesses
- Stop all pollutions, sewage overflows, and sewage spills into rivers, to support cleaner rivers, canals and lakes in the region

Meeting these ambitious targets will continue to require significant investment which will mean customers' water and wastewater bills are impacted beyond 2030.

- What do you think of this? Is it acceptable that water bills continue to increase from 2030 to 2050 to enable Thames Water to meet these service and environmental targets?

Thanks for all of your input today. We'll see you tomorrow for the final set of questions about river swimming and water quality.

Outline of objectives of the discussion guide

Bathing water

- What are customers' attitudes towards swimming in rivers (in the Thames Water area)?
- Which waterways have they/anyone they know swam in, or want to swim in?
- Is there support (or not) for investment to ensure various stretches of river have a reduced risk of falling ill from swimming in? If so, how many?
- Are opinions different among those who live closer to or use rivers?

4.1 Swimming and water quality

For this final day we'd like to talk about the use of rivers, lakes and canals for swimming. So first of all we'd like to know about whether you have used any bodies of water for swimming in the Thames Water region.

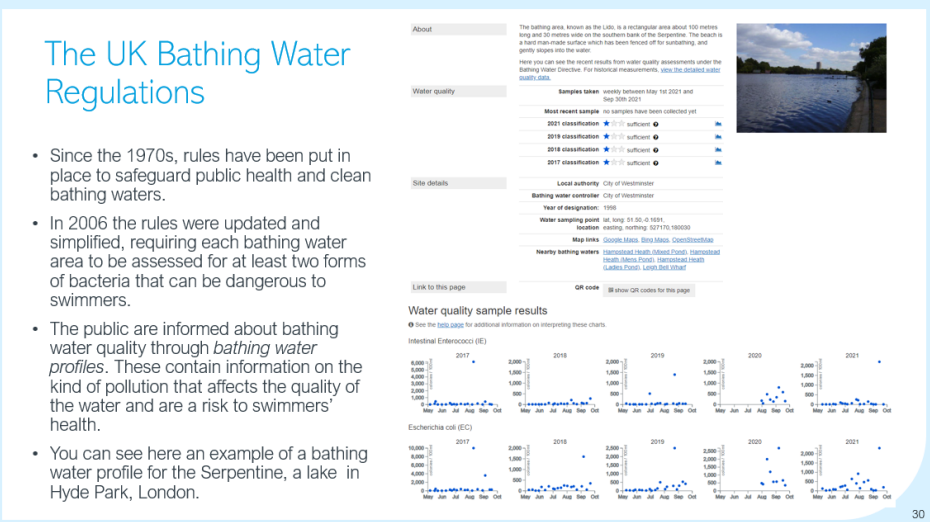
- Do you or any member of your family and friends ever go swimming in rivers, lakes and canals in the Thames Water area?
- If yes, how often do you or your friends and family do this and where do you go to swim?
  - Is there anything you or your friends and family particularly enjoy or don't enjoy about this?

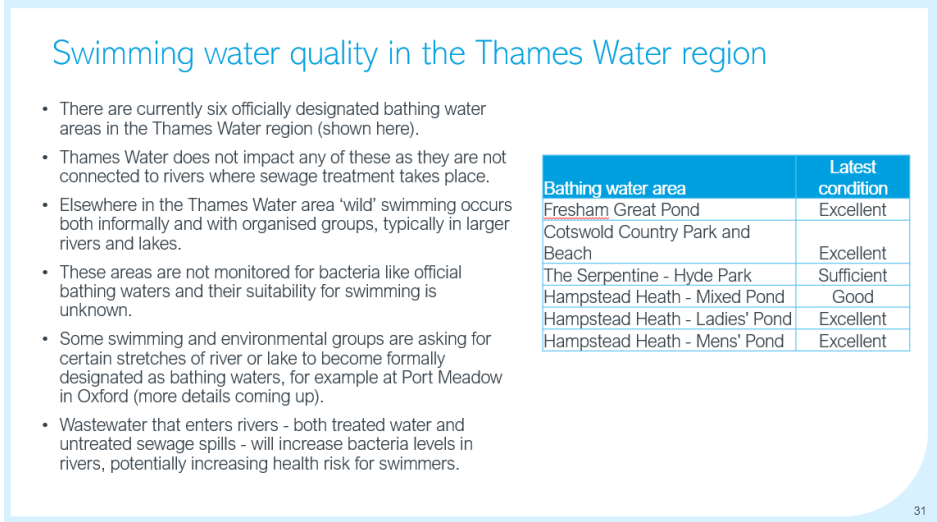
- If no, are there any particular reasons why you do not swim in rivers, lakes and canals, or is it something you might consider in the future?
- Is there anything that might make you more likely to consider swimming in rivers, lakes and canals?

4.2 Background on swimming and water quality

We'd like to show you some information about the rules surrounding bathing water quality for swimming in rivers, lakes and canals.

Note: Rules also apply to the quality of sea water for sea swimming, however there are no coastal areas in the Thames Water area, so we won't be talking about that.





- What are your views on the information that you've just read? Are you surprised or not to read of the swimming water quality assessments?
- Would you expect the water quality assessments to be better or worse than they are? Or are they as you might have expected?
- For those of you that swim, does this information make any difference to your likelihood to continue doing so?
- What action do you think Thames Water should be taking with this information in mind?

4.3 Improving the quality of rivers, lakes and canals for swimming

We'd like you to look at some information on what is required to create a designated safe stretch of river for swimming.

First of all, here are some details of a project that Thames Water are involved in, for a stretch of the river Thames that runs through Oxford.

Here you can see more detail of the activities and costs involved in designating a stretch of river safe for swimmers.

As before, in terms of the impact of these plans on annual customer bills: For context, the average household bill for Thames Water customers was £418 in 2021-22, so that amount may have been higher or lower for different customers (depending on things like having metered water).

Also, do keep in mind that Thames Water have other initiatives to tackle in the future, as well as creating designated stretches of bathing water quality river, which might also impact the bill (for example other actions to ensure a reliable water & wastewater service and to protect the environment).

Improving swimming water quality, an example

- Thames Water aims to stop the 1,300+ annual sewage spills into the river Thames where it runs through Oxford
- In 2020 5,000+ local people signed a petition, and Oxford City Council then voted unanimously in favour of:
  - A designated bathing water area in Oxford
  - Real-time alerts of raw sewage discharges nearby
  - Upgrades to nearby sewage treatment works
- In 2021 the Oxford Rivers Project was launched, including:
  - Water quality testing for bacteria by 'citizen scientists'
  - Real-time public alerts of sewage spills from 6 Thames Water locations in the area
  - Bathing water status application started
  - Surveys of river use
- It is anticipated that this Oxford stretch of the river Thames will be given designated bathing water status in the next few years, although it may take several years after designation for the river water quality to consistently achieve the minimum standards.

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Investing in designated 'bathing water' stretches of river

Thames Water are already planning for real-time data to be published for all their sewage spill overflows - enabling nearby swimmers to check when rivers may have increased health risk.

Steps required to reach bathing water status for safer swimming:

- Reduce the amount of bacteria entering the water from the sewerage system:
  - Improve nearby sewage treatment works and the sewer network so that sewage spills are reduced (as we discussed yesterday)
  - Installing bacteria-reducing treatment at sewage treatment works, such as ultraviolet light disinfection
- Working with farmers and land managers to reduce bacteria that enters rivers from other sources

Each stretch of designated bathing water is estimated to cost £30 million, which is about **15p on each household customer bill per year**

- Thames Water could aim for one designated bathing stretch of river by 2030, and then several more in the future, with a similar impact to customer bills – about **15p per year per household customer bill, for each stretch**

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4.3 Improving the quality of rivers, lakes and canals for swimming (contd')

Given what we have shown you:

To what extent do you support or oppose Thames Water investing in the creation of one designated bathing water (safe for swimming) stretch of river in the Thames Water region during 2025-2030, with the impact on all customer bills as mentioned?

- Strongly support this
- Somewhat support this
- Somewhat oppose this
- Strongly oppose this

Please explain the reason for the answer that you have given

- Should Thames Water aim for more than one designated bathing water stretch of river by 2030, if so how many do you think?

- What are your thoughts on customers helping to fund the creation of more designated 'safe for swimming' stretches of river across the Thames Water area, through their water bills, **from 2030 to 2050**?
- How many, if any, stretches of designated bathing water should Thames Water aim for from 2030 to 2050?

Appendix – Sustainable Abstraction discussion guide & stimulus

Day 1.1 - Introduction

Welcome to your first activity.

Consumer Panel - *Over the next few days we want to share some information on how Thames Water abstracts (takes) water from groundwater and watercourses, treats the water, and supplies it to customers and businesses for drinking and other uses. We want to understand your views in detail as a bill paying customer.*

Future bill payer - *Over the next few days we want to share some information on how Thames Water abstracts (takes) water from groundwater and watercourses, treats the water, and supplies it to customers and businesses for drinking and other uses. We know you don't pay bills right now but please base your answers as though you would be (because you may have to in the not too distant future!)*

Business and consumer - *Over the next few days we want to share some information on how Thames Water abstracts (takes) water from groundwater and watercourses, treats the water, and supplies it to your business for drinking and other uses. We'd like you to respond from your point of view as a business owner or individual responsible for dealing with water in your business role.*

Before we begin, we thought it would be important to tell you a bit more about this research.

Every five years, water and sewerage companies take part in what is known as a Price Review. During this process, water and sewerage companies plan out the activities they will undertake over a specified five-year period in terms of delivering for customers, and any impacts on the bill that their activities might have. These activities range from delivering customer services, managing the water and sewerage networks (including repairs and replacements), reducing carbon emissions, and making a difference in local communities (including the natural environment such as rivers and reservoirs). These five-year plans are presented to Ofwat, the water and sewerage industry regulator, which has the power to accept or reject each company's plans and proposed bill impacts. The current Price Review covers activities planned for the period 2025-2030.

Day 1.1 – Introduction (contd.)

Water and sewerage companies have a duty to consult with their customers about their plans, and to reflect this in submitting their plans to Ofwat.

This research is about one element of Thames Water's price review, specifically how it abstracts (takes) water from groundwater and watercourses, treats the water, and supplies it to customers and businesses for drinking and other uses.

We are looking for your feedback on Thames Water's plans in this area. All of your feedback will be taken account of in a report written by Verve, and decisions about what course of action Thames Water may take will be influenced by your comments. If you have any questions about this, please don't hesitate to drop us a line.

There will be quite a lot of information to read on this first day, but the next three days should take a little less time. We'd like you to understand the information we're going to show you so that you are able to give an informed view, while considering the issues involved.

So first we want to get your overall view of Thames Water in its role of delivering drinking water to your house or business

- What one word comes to mind first when you think about Thames Water's role in delivering drinking water to its customers
- What do you think they do well in this role?
- How would you want to see them improve in this role?

Day 1.2 – About this process

You are being asked to give some early input into how Thames Water should approach how they abstract (take) water prior to treating it and supplying it to customers over the next 5 year planning period (from 2025 onwards), and further into the future.

We will be sharing with you:

- How water is abstracted (taken) from the natural environment, treated and supplied to customers as clean drinking water
- The impact on the environment of taking water from certain sources
- Some different options as to how Thames Water might reduce the impact of how they take water from the natural environment to treat and supply it as clean drinking water

Wherever you see the word ‘abstracted’ or ‘abstraction’ from now on, this refers to the process of taking or removing water from water that is stored in the ground (groundwater) or from rivers and streams. We’ll explain more about this as we go along.

There’s quite a bit to read on day 1, so please bear with us.

Please note: we are running a number of research communities on specific issues. This particular community is about the issues outlined above only. We have covered the impact of sewage and wastewater spills on the natural environment elsewhere, so please try and avoid extensive discussion of this topic in your responses.

Day 1.3 – Importance of the natural environment

First of all, we'd like to talk about your feelings towards the natural environment, and how you use it.

- How important is the natural environment to you personally? By which we mean access to green spaces and water?
- What bodies of water (rivers, lakes or canals) would you say are closest to you?
- How often do you visit each of these rivers, lakes or canals and for what purpose?
    - It could be for walks, fishing or other activities such as swimming, canoeing, kayaking or watching wildlife
    - Please tell us about your activities and how important they are to you
- How important is to you that these bodies of water are well maintained and provide a safe habitat for wildlife?
    - Would you say you have specific knowledge/interest in these issues or do you just have broader general concerns about them?
    - If specific knowledge/interest, please tell us about this
- Do you have any specific concerns about the condition of the bodies of water that you live nearest to? What are they and why?
- What could Thames Water be doing to address some of your concerns?

Day 1.4 – Awareness of the sources of clean water

We'd now like to discuss the sources of clean water that are supplied to domestic customers and businesses for drinking and other uses

- As it stands, how much would you say you know about where the clean water that Thames Water supplies to homes and businesses comes from?
- Please tell us about the various sources that you are aware of that Thames Water uses to provide clean water
- Are you aware of any specific issues or challenges with the supply of clean water to homes and businesses?
- Are you aware of any specific issues or challenges in relation to the sources from which this water is obtained?

Day 1.5 – About the water cycle

We'd now like to provide you with some information about the **water cycle**.

The following chart shows a simplified version of the water cycle, highlighting how water is treated to clean it, then delivered though pipes to customer taps, before it is taken away as sewage, which is treated, returned to the environment and then abstracted (taken) from rivers and other water bodies to begin the cycle again.

The next three information slides give you more information about what we will be talking about specifically over the next few days. This is **how water is abstracted from rivers and streams to provide clean water for homes and businesses.** Please take time to read them carefully.

We're now going to focus specifically on rivers and tell you more about how water behaves in this natural environment.

- Are there any questions about what you have just read?
- Which parts of this were new information to you?
- Are you aware of any impacts on the environment of taking water from rivers and streams or from the ground, to provide clean water for homes and businesses?

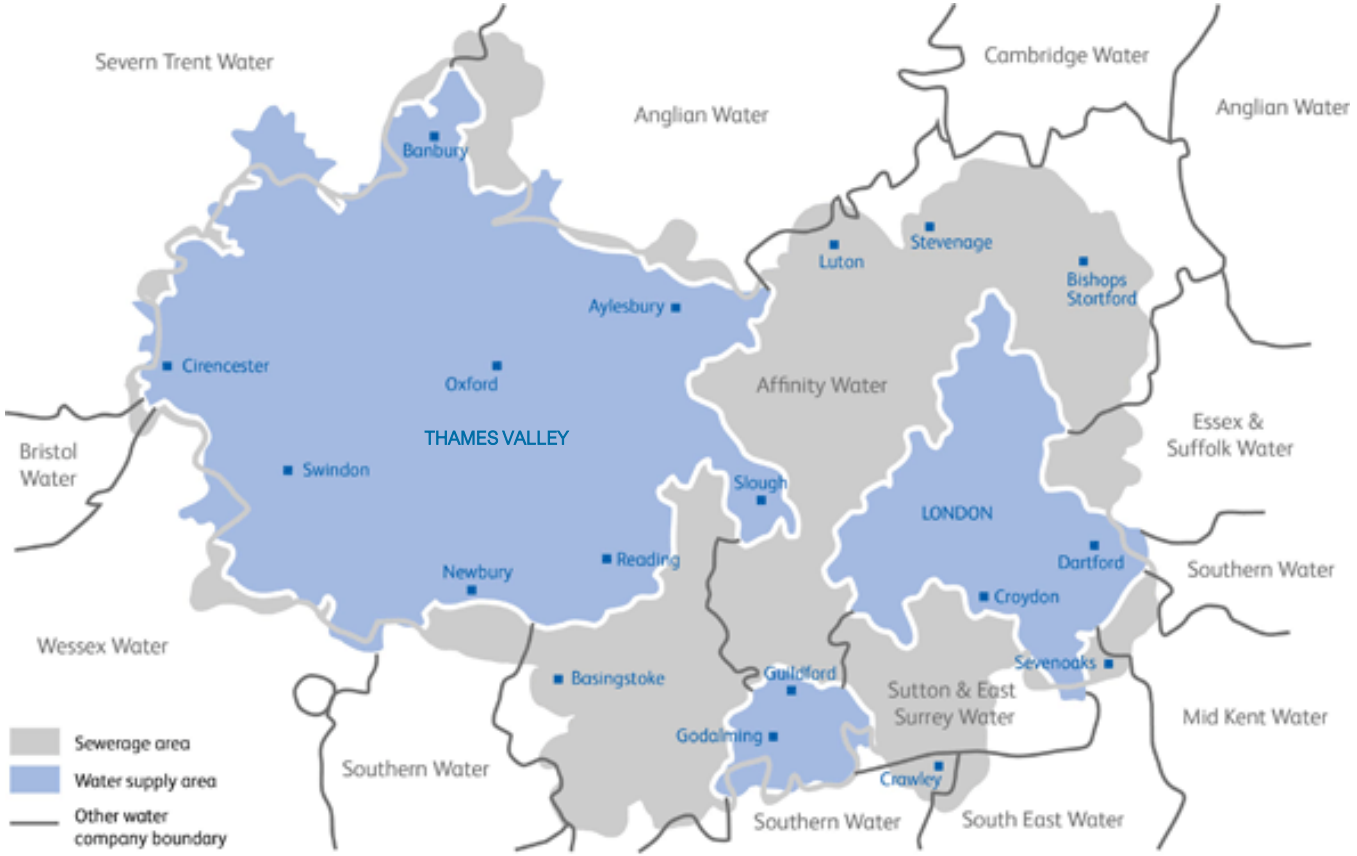
Before you go, we want to show you some more detail on where water comes from and the impacts this can have.

So, Thames Water take a significant proportion of water from rivers, or from aquifers, which are sources of water stored in the ground (ground water) which can also impact on nearby river flows.

Finally for today, were you aware of any of these impacts of taking water from rivers or from groundwater aquifers?

- To what extent do you feel whether or not these impacts on rivers are acceptable in securing a supply of water for homes and businesses?
- Do you feel that Thames Water should be working to minimise these impacts on rivers?

Thames Water is the UK's largest water and wastewater services provider

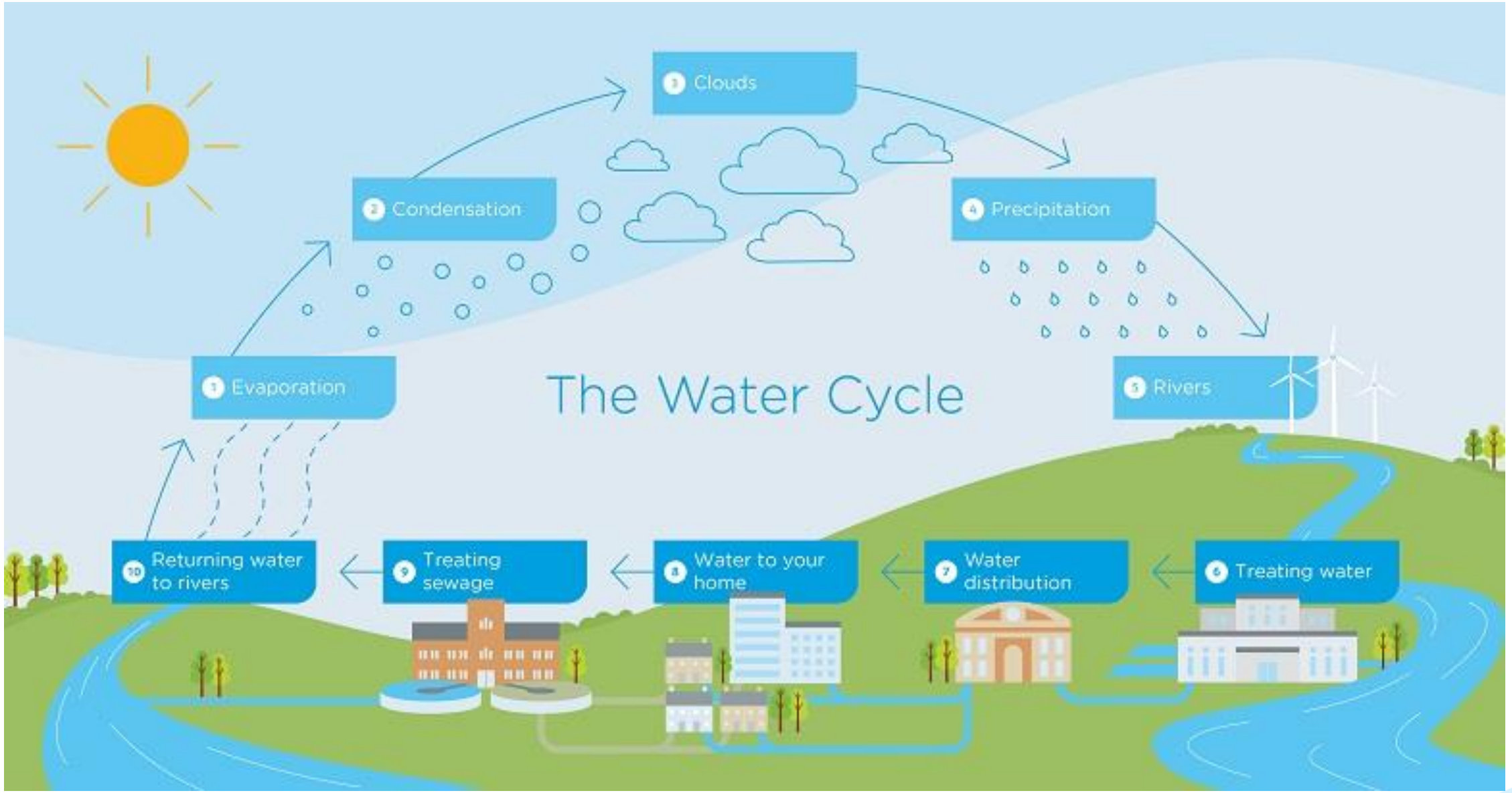


10 million water customers

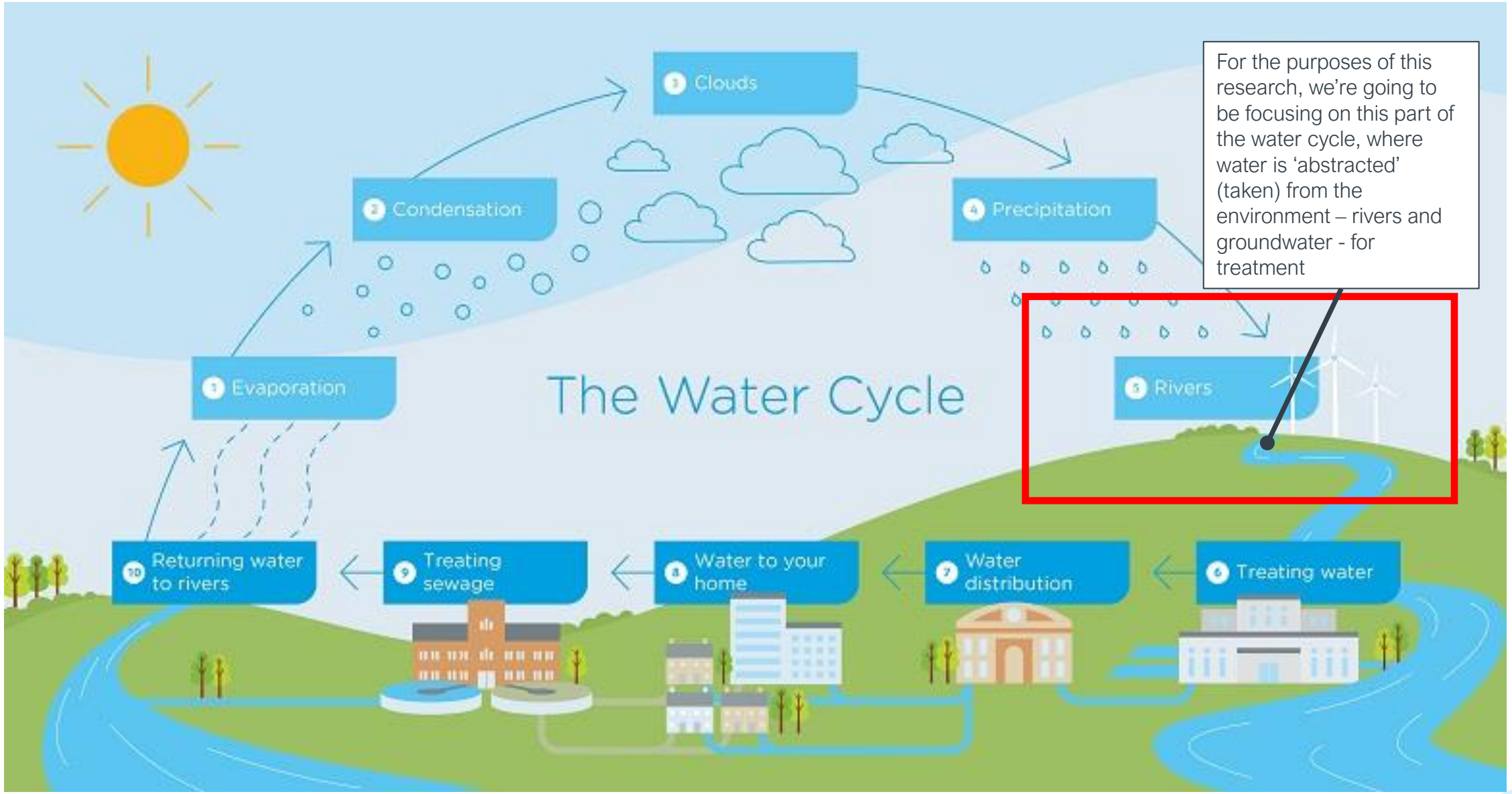
15 million wastewater customers

Thames Water supplies around 2.7 billion litres of drinking water on average every day to homes and businesses in London and across the Thames Valley

The Water Cycle



The Water Cycle



A more detailed picture of this part of the water cycle

Water is abstracted from rivers and groundwater, treated and then piped to customers homes and businesses as the public drinking water supply

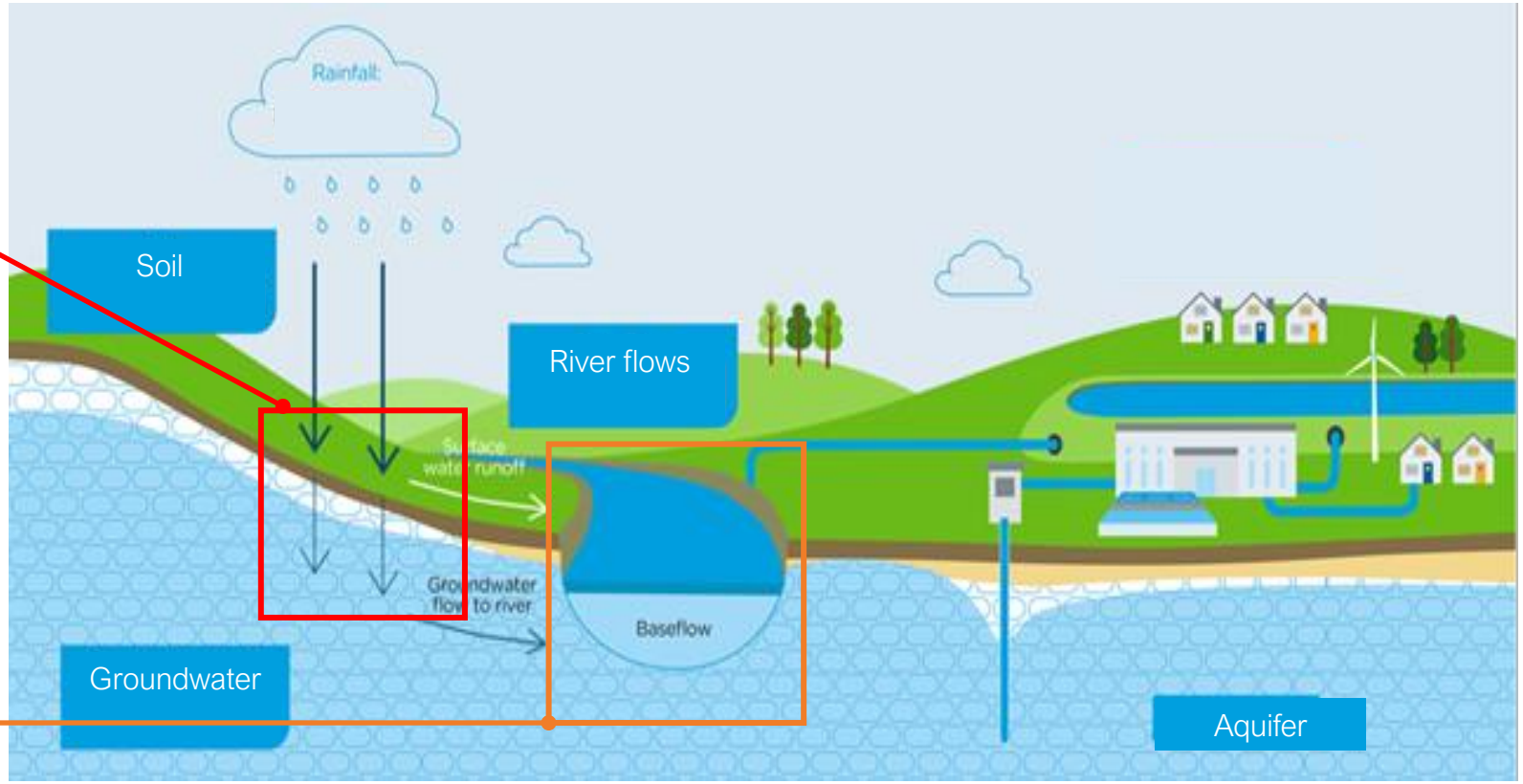
Groundwater

- Rainfall filters into the ground and tops up groundwater
- Groundwater is stored naturally in layers of rocks that can hold water, these are called **aquifers**
- Groundwater is abstracted by water companies by using boreholes

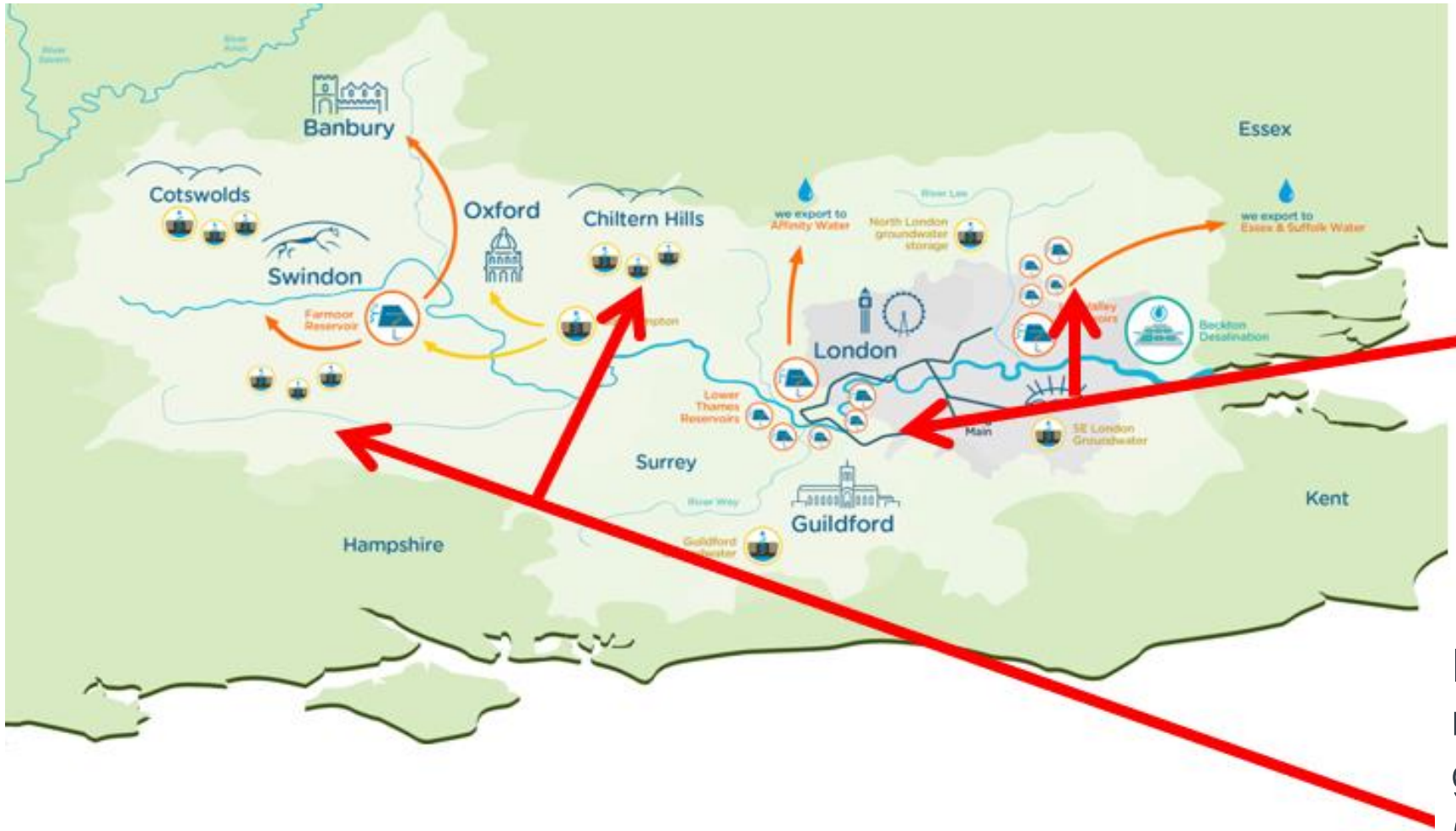
Rivers

Rainfall flows directly into rivers, known as ‘surface water runoff’

Groundwater seeps from the aquifers into the rivers, providing important flow in the river



Where does Thames Water take water from to supply homes and businesses with drinking water?



In London the main source of water is rivers (80%) and the rest is taken from groundwater aquifers (storage in the ground)

In the Thames Valley the main source of water is groundwater aquifers (70%) and the rest is taken from rivers

What are the environmental impacts of taking water from rivers and groundwater aquifers?

- Taking water from rivers, or from the aquifers that feed rivers and streams, can have a serious impact on both the natural environment and wildlife.
  - The flow of a river can be significantly reduced, especially in drier and hotter parts of the year
  - Fish and other creatures and plants that depend on rivers and streams may struggle to thrive and survive in lower flowing water
  - People who visit rivers for recreation, sport and leisure may be impacted, for example people fishing may have a poor experience

- In the UK only around 15% of rivers are considered to be in good health*. Good health means the flow and quality of the water is good, supporting plants, fish and other animals
- The Environment Agency monitors the health of the river and where there are concerns it will work closely with organisations such as Thames Water to reduce the amount of water taken, or agree what can be done to lessen the impacts

(Note – river health related to pollution is also addressed by the Environment Agency and Thames Water, but we're not focusing on that in this particular research)

Experts monitor data on the health of rivers and groundwater → They consider if the abstraction of water impacts plants or wildlife → If negative impacts are identified then they consider what actions are needed

* Environment Agency 2020

Day 2.1 – Monitoring and regulation

Welcome to day two and thanks for all of your input yesterday.

You can download of the information from yesterday here if you want to remind yourself about the water cycle, where Thames Water abstracts (takes) water from and what the environmental impact of this are.

- Did any of the information you received yesterday surprise you in any way?
- What and why?

We now want to tell you a little more about where Thames Water are allowed to take water from to supply homes and businesses.

- At this point, and having learnt what we've shown you so far, do you feel Thames Water should be looking to reduce the amount of water abstracted from rivers or not?
- Do you feel you have enough information to have an opinion on this? Is there anything else you would wish to know in answering this question?

Day 2.2 – Thames Water's progress to date in reducing abstractions

We'd now like to show you what Thames Water have done about reducing water abstraction so far.

- What are your thoughts about Thames Water's progress on reducing abstraction so far?

Now we're going to show you a case study of the impact Thames Water have had on the River Kennet and what improvements have been made.

As you have seen from the case study of the River Kennet, taking action to reduce abstraction and protect rivers and chalk streams has a cost, can take some time to implement and the construction work involved will have had an impact on the environment itself. There would've been a small impact on all customer bills to fund such a project too.

- To what extent would you say you support or oppose Thames Water spending money to reduce abstraction and protect rivers and chalk streams in this way?
    - Support strongly
    - Support
    - Neither support nor oppose
    - Oppose
    - Oppose strongly

What do you think are the benefits (if any) of spending money to reduce abstraction to protect rivers and chalk streams?

- And what are the drawbacks (if any) of spending money to reduce abstraction to protect rivers and chalk streams?
- Should the environmental impact of (for example) the construction of a new water pipeline (to ensure all areas still have a drinking water supply) be taken into account when considering whether you support or oppose a project that would reduce abstraction?

Day 2.3 – Thames Water's Environmental Destination and rational for going beyond WINEP legislation

Here's some information on what Thames Water is planning to do in the future, to reduce abstraction further.

In terms of the impact that Thames Water's plans will have on customer's annual bills: For context, the average household bill for Thames Water customers was £418 in 2021-22, so that amount may have been higher or lower for different customers (depending on things like having metered water).

Also, do keep in mind that Thames Water have other initiatives to tackle in the future that might also impact the bill – so as well as reducing water abstraction to protect chalk streams and other rivers, there may be other actions to ensure a reliable water & wastewater service.

So, considering the information about Thames Water's plans in response to the Environment Agency's requirements to reduce abstraction in the next five years – do you think Thames Water should:

1. Aim to reduce abstraction in all of the areas in their plan by 2025
2. Aim for smaller reductions to start with so that all reductions in their plan are done by 2030 instead
3. Neither – they should reduce abstraction even more or in more places
4. Neither – they should not reduce abstraction

Please give reasons for your answer.

- Considering this information, what do you think Thames Water should do in response to the Environment Agency's requirements to reduce abstraction in the longer term, from 2030 onwards?
- Should abstraction be reduced further? Why/why not?

Note – the question above should have included the dates 2025-2030 (instead if 2025) and 2030-2035 (instead of 2030) – as per the slide that was viewed in association with this question (see slide 64)

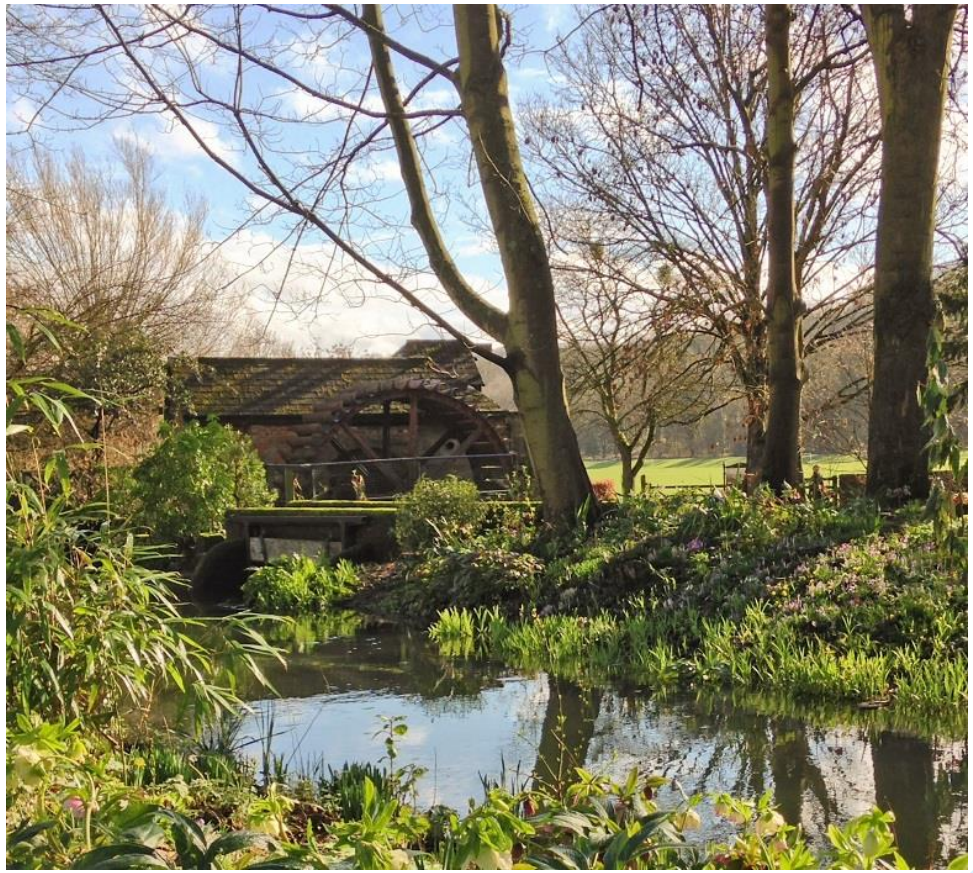
The amount of water that can be taken from the environment is controlled

The Environment Agency issues licences to water companies, and other water abstractors such as farms and businesses, which set out how much water can be taken from specific water sources.

Thames Water has:

- 190 river and groundwater sources
- 350 groundwater boreholes
- 16 river abstractions
- All river abstractions depend on groundwater

- Each licence specifies:
  - Source of the abstraction
  - Volume of water allowed to be taken (by hour, day, year)
  - In some cases, whether abstraction must stop or reduce when flows are low
  - Expiry date (licences need to be renewed every few years)
- Obeying the licence is important – if more water is taken than allowed then this could damage the environment as well as result in prosecution and fines



Chalk streams/rivers are a rare and important habitat

Some of the places that Thames Water is allowed to abstract water are near rare types of river called chalk streams/rivers

- They are a source of very clean water from underground chalk aquifers and springs
- They are a valuable and important habitat for sensitive species of animals and plants, such as mayflies, dragonflies, trout and stream water-crowfoot
- They are of high value for culture and recreation, for example fishing

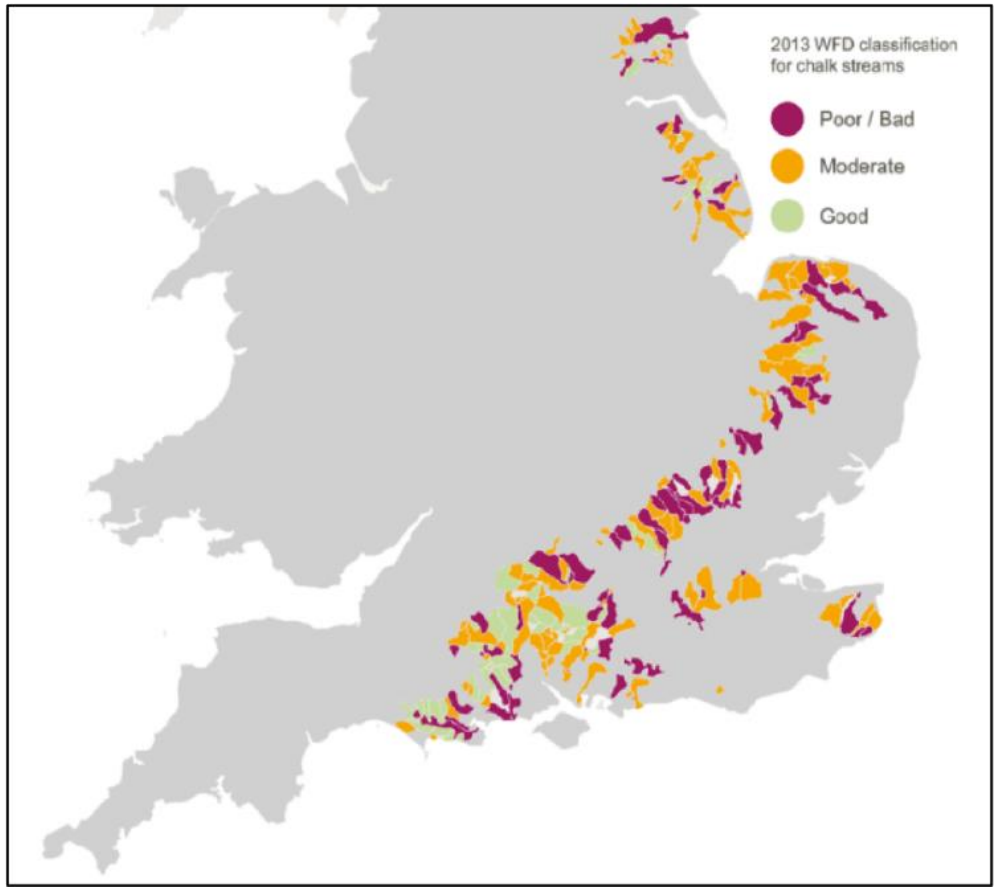
"[Chalk streams] are a haven for iconic species like the otter and kingfisher, which is why we work to protect them.

But a combination of population growth, a spiralling increase in water use and pollution have put huge pressure on our rivers and streams."

WWF

Chalk streams/rivers are a globally rare habitat

- There are only 200 chalk streams in the world, 85% of which are found in southern England.
- Many of those in England are assessed (by the Environment Agency) to be in poor/bad condition.
- There can be many reasons for this, such as the flow, water quality, and man-made changes to rivers and streams by various organisations for various reasons.
- Water abstraction from chalk streams that are already in moderate to poor condition can damage them further.



Source: WWF (2014), State of England's Chalk Streams

Thames Water has already reduced its abstractions from vulnerable rivers and streams

- Thames Water has worked with the Environment Agency to reduce the amount of water it takes from the environment:
  - Abstraction from chalk streams has been reduced by 80% since 1997, which is around 100 million litres a day that is not taken from chalk streams now – (that's about 40 Olympic swimming pool's worth, or about 4% of all water supplied for drinking water)
  - A range of investigations have been undertaken to understand the impacts on the environment
  - Other actions have been implemented to improve the environment – for examples changes to a river's flow which has improved conditions for fish, wildlife and plants (example below):

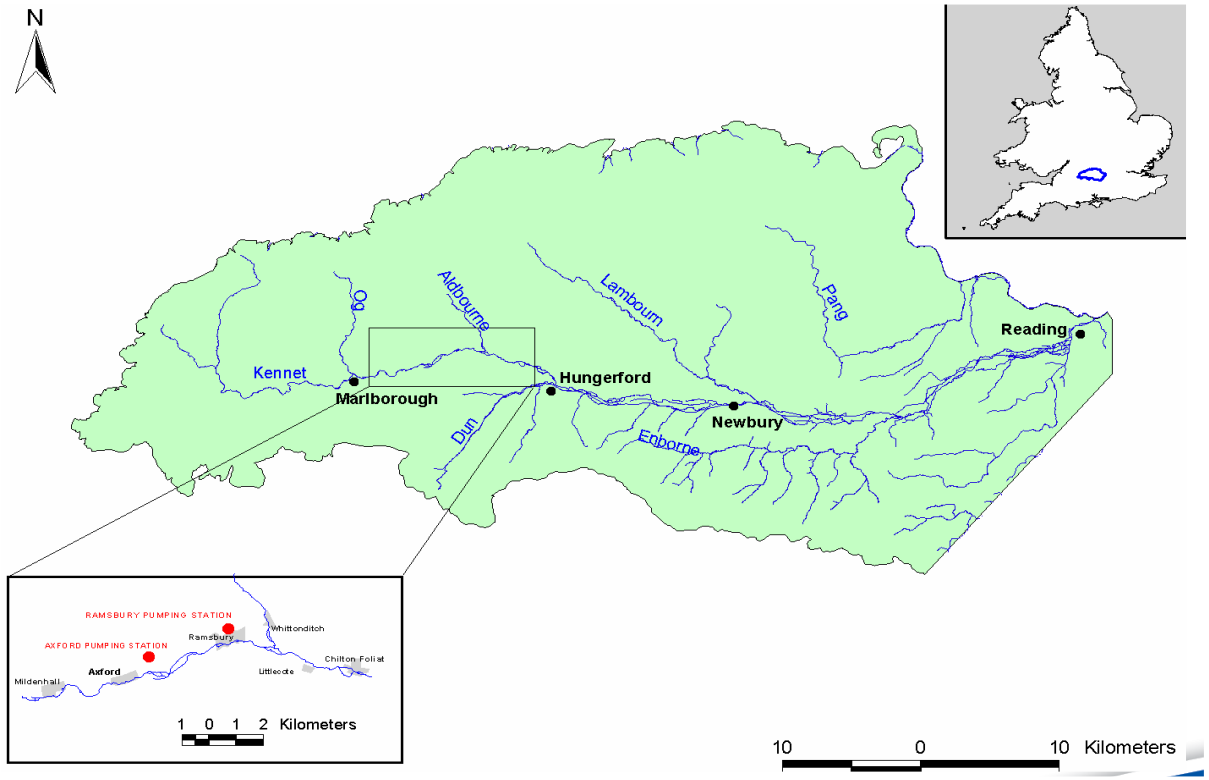
Before: Straight over-widened river channel leading to low speed of water flow

During: Adding riffles (sections of shallow faster flowing water with a gravel bed and deeper pool sections) - a good habitat for fish and other wildlife

After: River channel fully narrowed, with pool riffles

Case study: the River Kennet - how Thames Water could act to protect rivers and chalk streams from too much abstraction

- The **River Kennet** (in Berkshire/Wiltshire) is one of England's most important chalk rivers. It is around 45 miles long. It is designated as a Site of Special Scientific Interest due to some rare fish, wildlife and plants that live there
- Thames Water previously had a licence to take up to 13 million litres every day (5 Olympic swimming pools) from the aquifer at Axford in the Upper Kennet, and abstracted another 3 million litres per day at nearby Ogbourne
- The flow in the river was sometimes running very low, with potential for impacts on the fish, wildlife and plants in it, as well as those who use the river
- Thames Water abstract a total of 80 million litres per day across the whole of the Kennet catchment, although much of this is near the bottom of the river in Reading and Newbury



Case study: the River Kennet - how Thames Water could act to protect rivers and chalk streams from too much abstraction

- In 2010 Thames Water agreed to reduce its water abstraction to protect the **River Kennet** and one of its tributaries the **River Og**
- To enable this, a 10 mile pipeline was constructed from a reservoir in north Swindon, to another reservoir in south-east Swindon
- This made sure that there was an alternative water supply for customers in that area, transporting water between reservoirs instead of taking groundwater from the catchments of the Kennet and Og
- The cost was £30 million, and it took 4 years to develop and build
- The Rivers Kennet and Og have benefited from these changes – a better flow, improving the conditions for fish, animals and plants

Protecting the natural environment - the next 5 years

- Over the next 5 years the Environment Agency requires each water company to reduce the amount of water abstracted - to help improve rivers and streams.
- In response Thames Water plans to make reductions at the following water sources, which are all near vulnerable streams or rivers. These reductions will go ahead in 2025-2030 if the Environment Agency agrees.

New Gauge, near Ware in Hertfordshire - 60 million litres per day	Bradfield, between Reading and Newbury - 2.3 million litres per day	Netley Mill, near Guildford –1.2 million to 4.5 million litres per day	Epsom, South-West of London - 14 million litres per day

2.5 million litres = 1 Olympic swimming pool worth of water

- Thames Water will need to compensate for the water that these abstractions would have provided, so it may need to invest in new water sources and build new pipelines to transfer water from elsewhere, to ensure customers still receive a reliable water supply. The solutions needed will depend on the volume of water and where it is.

The cost of making **all of these reductions** and building alternative water sources before 2030 would have an impact on customer bills of up to **£5.00 extra per year, per household from 2025-2030**

Alternatively **smaller reductions** could be made up to 2030, and the rest completed in 2026-2035. Doing this would reduce the impact on customer bills up to **£2.50 per year, per household, from 2025 to 2030**

Protecting the natural environment - the longer term

- The Environment Agency has asked Thames Water to develop a plan to consider what other abstractions should be stopped or reduced to protect the environment in the longer term (beyond 2030)
- This will help our environment cope with changes to the climate (such as lower rainfall and warmer temperatures that could otherwise add further problems for low flowing rivers)
- There is also increasing pressure from environmental groups to do more to protect rivers and chalk streams
- To decide how much more abstraction can be stopped, Thames Water needs to consider:
  - -Which abstractions should be reduced or stopped, taking account of what is known now about the environmental benefit that would be achieved
  - -What needs to be done to make the change, for example developing alternative sources of water* and pipelines to move water to where it's needed (to supply drinking water) – which may have other environmental impacts due to the construction needed
  - -What the actions will cost as these will be passed onto customers as a bill increase

*Alternative sources of water supply can take years to build:

- A new reservoir = 15 years
- A water re-use plant = 7 years
- A pipeline to connect reservoirs = 4 years

Day 3.1 – Thames Water proposals for reducing abstractions

Welcome to the final day of activities and thanks for all of your input yesterday.

You can download all of the information from the last two days here if you want to remind yourself about everything we have told you so far. You may want to refer to it when we ask you for your thoughts on what Thames Water should do going forward.

Thames Water has proposed a number of options to reduce abstraction even further in the future. All of these go further than would be required by current legislation, but as we showed you yesterday, the Environment Agency are suggesting that Thames Water aim to reduce abstraction as much as possible in the longer term.

We would like your views, as a customer, on what you think Thames Water should do.

Different options will have different impacts on customer bills, as well as other impacts, for example, if Thames Water builds a pipeline to divert water from another source, there will be other environmental impacts as a result, such as the need for construction, energy and carbon emissions to build the pipeline and then to pump water around.

Day 3.1 – Thames Water proposals for reducing abstractions (contd,)

In terms of the impact of these options on annual customer bills – as a reminder, the average household bill for Thames Water customers was £418 in 2021-22, so that amount may have been higher or lower for different customers (depending on things like having metered water).

Also, do keep in mind that Thames Water have other initiatives to tackle in the future that might also impact the bill – so as well as reducing water abstraction to protect chalk streams and other rivers, there may be other actions to ensure a reliable water & wastewater service.

Which of the three options (if any) would you prefer Thames Water to aim for, in terms of reducing water abstraction from rivers and streams in the long term?

1. Low reduction
2. Medium reduction
3. High reduction
4. None

- Why did you choose that option?
- What information was most important to you in making that decision?

Day 3.2 – Certainty over environmental impact

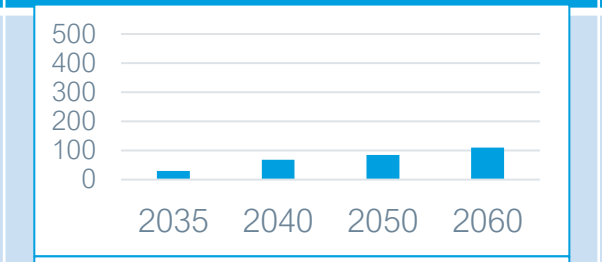
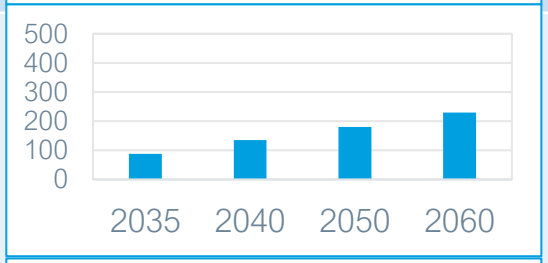
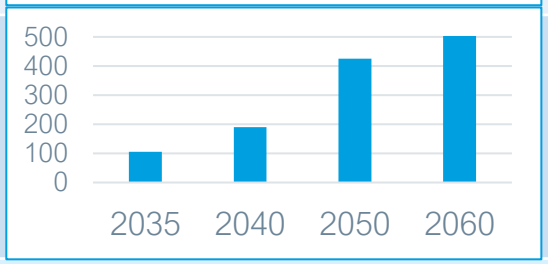
Due to a number of factors it is not always possible for Thames Water or the Environment Agency to predict the environmental benefits that can be gained by reducing abstraction or making other improvements to rivers – for instance, it can be difficult to detect whether reducing abstraction has resulted in more water being in a river, because river flows vary a lot depending on whether, when or how much it has rained. Also abstraction changes can be quite small relative to the overall flow in a river and any changes could occur slowly over a long period of time.

If Thames Water was planning a project to reduce water abstraction (for example building a pipeline to divert water from another source), before they committed to this how certain do you think they should be that this project would result in an environmental benefit for the chalk stream or river?

1. They should just be a little bit certain there will be an environmental benefit
2. They should be quite certain there will be an environmental benefit
3. They should be completely certain there will be an environmental benefit
4. It doesn't matter, they should continue with the project to reduce abstraction even if there was no proven environmental benefit

- Please tell us why you gave that answer

Thames Water has developed 3 options for reducing abstraction in the longer term (from 2030 to 2060)

Option	**Reduction in the volume of water abstracted** (in millions of litres per day) **The higher the reduction =** • Increase in potential benefits to rivers and streams, fish, wildlife, plants and recreation • Increase in construction and carbon emissions building new water sources and potential harm to wider environment	**Timespan – the volume of reduced abstraction, how the water that is not abstracted adds up over the years** (in millions of litres per day)	**Estimated extra on customer bills per household per year to achieve the reduction**
Low reduction	110 million litres per day (a reduction of ~ 5% compared to current abstraction) • 8 sources in Kent, London & Herts • 9 sources in Thames Valley		2030-35: £5 2036-40: £11 By 2060: £17
Medium reduction	230 million litres per day (a reduction of ~ 10% compared to current abstraction) • 11 sources in Kent, London and Herts • 14 sources in Thames Valley		2030-35: £10 2036-40: £14 By 2060: £24
High reduction	535 million litres per day (a reduction of ~ 20% compared to current abstraction) • 18 sources in Kent, London & Herts • 31 sources in Thames Valley		2030-35: £12 2036-40: £20 By 2060: £50

Day 3.3 – Wrap up and overall prioritisation

Thanks for all your input on this, it has been interesting seeing everybody's comments coming through. Alongside the issues around abstraction that you have been discussing over the past few days, Thames Water has several other initiatives that they are aiming to achieve by the end of 2030, over and above the main provision of your water and sewerage services.

All these initiatives could have a positive impact on improving both service and the environment, but they could also impact on your annual bill.

Please look at this list of the main extra initiatives that Thames Water could undertake between 2025-2030 and rank them in order of priority you think Thames Water should give them, for instance where you think Thames Water need to make the most improvements. So, the most important initiative for Thames Water to tackle should be no 1 and the least important initiative for them to tackle should be no 8.

1. Achieving Net Zero carbon emissions for its water and waste operations
2. Replacing a number of large, aging water mains that could be dangerous if they burst (for example could flood basements and underground stations)
3. Replacing large sections of aging water pipework in London, rather than fixing individual leaks as they happen
4. Helping customers with lead pipes on their properties to replace those, to eliminate the risk of lead being in their water supplies
5. Increasing the capacity of the sewer network to prevent sewer overflows into homes and businesses
6. Reducing sewer overflows into rivers by improving sewage treatment works, aiming for the number of these sewage spills to be lower than what the Environment Agency allows
7. Ensuring stretches of rivers are safe for swimming in, by preventing sewer overflows into rivers in those areas
8. Reducing the potential damage to rare types of rivers (like chalk streams) by reducing the amount of water taken from them and building pipelines to connect communities to other water sources instead

Finally, please tell us (briefly in a sentence or two) why you think they should prioritise the two most important initiatives that you have ranked above.

Appendix – Lead Pipes discussion guide & stimulus

Welcome

Welcome!

Over the next few days, we want to share some information on the issue of lead water supply pipes in customer properties. We want to understand your views in detail as a bill paying customer.

Before we begin, we thought it would be important to tell you a bit more about this research.

Every five years, water and sewerage companies take part in what is known as a Price Review. During this process, water and sewerage companies plan out the activities they will undertake over a specified five-year period in terms of delivering for customers, and any impacts on the bill that their activities might have. These activities range from delivering customer services, managing the water and sewerage networks (including repairs and replacements), reducing carbon emissions, and making a difference in local communities (including the natural environment such as rivers and reservoirs). These five-year plans are presented to Ofwat, the water and sewerage industry regulator, which has the power to accept or oppose each company's plans and proposed bill impacts. The current Price Review covers activities planned for the period 2025-2030.

Water and sewerage companies have a duty to consult with their customers about their plans, and to reflect this in submitting their plans to Ofwat.

This research is about one element of Thames Water's price review, specifically how they tackle the issue of lead pipes in the water network.

We are looking for your feedback on Thames Water's plans in this area. All of your feedback will be taken account of in a report written by Verve, and decisions about what course of action Thames Water may take in the removal of lead pipes from the water network. If you have any questions about this, please don't hesitate to drop us a line.

Day 1: 1.1What you think about lead pipes

Welcome to your first activity

The first thing we want to talk about is lead pipes and what these mean to you.

So please answer the following:

- Are you aware whether you have lead pipes either supplying water to your home or inside your home (or business property)?
- If you have lead pipes, are you aware if there are any issues replacing them?
- If you found out you had lead pipes in your property, what would you do? Would you try to arrange to have them replaced or not?
- Do you know who is responsible for the water pipes in your property and leading into your property? If you don't know, please have a guess.
- Are you aware of any concern around lead pipes, whether in your own property or in other properties? If so, please describe the issues.
- Have you read or heard anything related to public health around lead pipes?
- What expectations do you have from Thames Water regarding replacing lead pipes that lead into or are inside properties? How much, if any, assistance do you think they would give to properties with lead pipes?

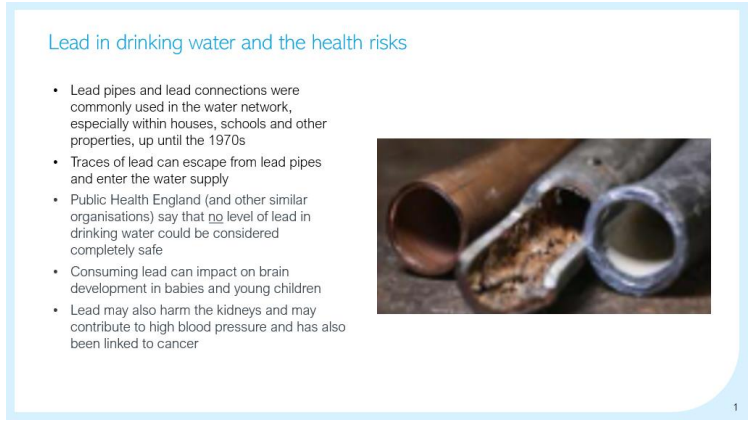
1.2 Information about lead pipes

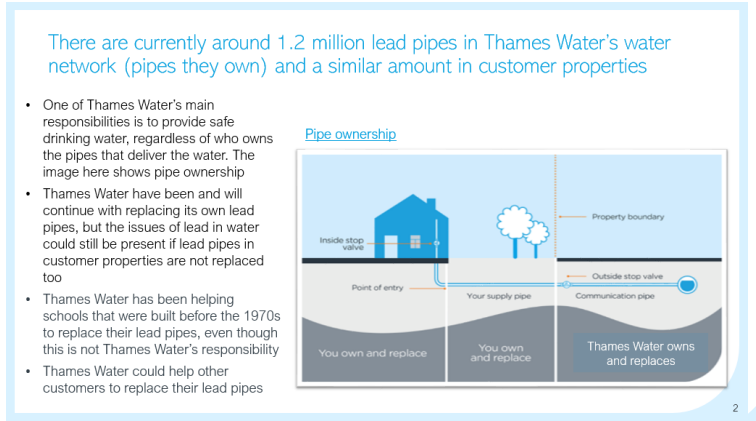
We are now going to show you some materials with background on:

- Why lead pipes are in the water network and the health risks
- The extent of lead pipes in the water network at present and an overview of the responsibility of pipe maintenance/ replacement
- (Thames Water plans to replace all lead pipes that fall within their remit, more details on this coming soon)

Please read the slides and tell us:

- How do you feel after reading these details on lead pipes in the water network?
- What are the key points you remember from reading this?
- Do you have any questions or concerns after reading this?
- Has reading these materials changed your views on lead pipes at all? Are you more or less concerned about lead pipes, or are your views the same as before you read these details?
- How important or unimportant do you feel it is to replace lead pipes?
- What are your expectations of Thames Water around replacing lead pipes? Do you feel they have any responsibility to help with lead pipes on customer properties, which are outside of their remit? If so, what would you expect them to do?
- Are you aware of anything specific Thames Water is doing about lead pipes in your area?





1.3 Current thinking about lead pipes from regulatory bodies and an overview of the challenges in replacing lead pipes

Thanks for that. We'd now like to give you an overview on the challenges around replacing lead pipes into the future.

- Based on what you have read so far, how do you feel about the present situation regarding replacing lead pipes? Why?
- What do you think about the European Union Drinking Water directive? Is it important to meet those standards or not? Why?
- Should Thames Water wait for the European Union Drinking Water directive to be agreed before planning to increase lead pipe replacement, or should they start making plans to increase from 2025 anyway?
- Do you have any questions or concerns after reading this information?
- So that this Drinking Water Directive is met, meaning more lead pipes need to be replaced, would you find it acceptable if there was a small increase to your annual water bill between 2025-30 (and beyond, to continue the work to replace all lead pipes)?

For context, the average household bill for Thames Water customers was £418 in 2021-22 (so that amount may have been higher or lower for different customers, depending on things like having metered water). Also, do keep in mind that Thames Water have other initiatives as well as lead pipes to tackle in the future which might also impact the bill (for example other actions to ensure a reliable water & wastewater service and to protect the environment).

- Please explain your answer
- Based on everything you have read today, have you learned anything you didn't know about lead pipes before? Has your opinion changed at all about this issue?

Lead pipes and regulation: It is likely that the UK will adopt European Union Drinking Water Directive amendments

What is the European Union Directive and what are these amendments?

- The European Union Directive sets out requirements for the quality of drinking water supplies across Europe. The provision of clean water is a public health priority - a key aim of the European Union. This Directive applies to the UK (despite its exit from the European Union)
- The amended Directive means the legally allowed level of lead in water will be moved from 10 micrograms* per litre down to 5 micrograms* per litre. This measurement is based on water coming out of a tap

(*a millionth of a gram)

What does the new Directive mean for the UK?

- All lead pipes in the UK water network will have to be replaced by 2080 - those that water companies own and those that customers own
- Water companies will be expected to minimise any risks of lead getting into water until all lead pipes can be replaced
- Water companies will have to significantly increase the rate they are replacing lead pipes from their networks to ensure all lead pipes are replaced by 2080

Sources:
http://dwi-content.s3.eu-west-2.amazonaws.com/wp-content/uploads/2020/11/02165529/Drinking-Water-Quality-in-England-and-Wales-as-the-UK-exits-from-the-European-Union.pdf
https://ec.europa.eu/environment/water/water-drink/index_en.html

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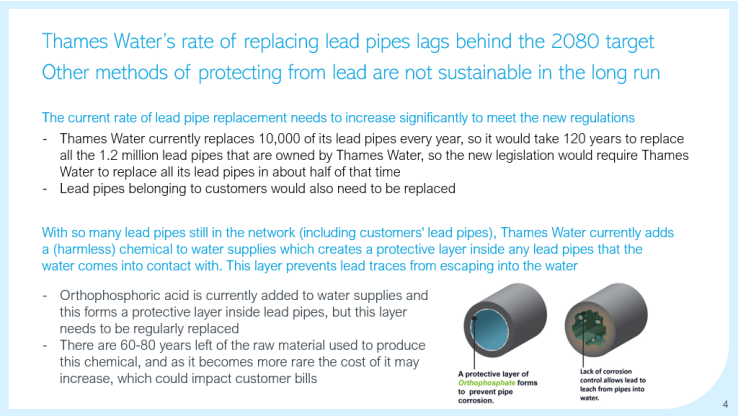


Thames Water's rate of replacing lead pipes lags behind the 2080 target

Other methods of protecting from lead are not sustainable in the long run

The current rate of lead pipe replacement needs to increase significantly to meet the new regulations

- Thames Water currently replaces 10,000 of its lead pipes every year, so it would take 120 years to replace all the 1.2 million lead pipes that are owned by Thames Water, so the new legislation would require Thames Water to replace all its lead pipes in about half of that time
- Lead pipes belonging to customers would also need to be replaced

With so many lead pipes still in the network (including customers' lead pipes), Thames Water currently adds a (harmless) chemical to water supplies which creates a protective layer inside any lead pipes that the water comes into contact with. This layer prevents lead traces from escaping into the water

- Orthophosphoric acid is currently added to water supplies and this forms a protective layer inside lead pipes, but this layer needs to be regularly replaced
- There are 60-80 years left of the raw material used to produce this chemical, and as it becomes more rare the cost of it may increase, which could impact customer bills

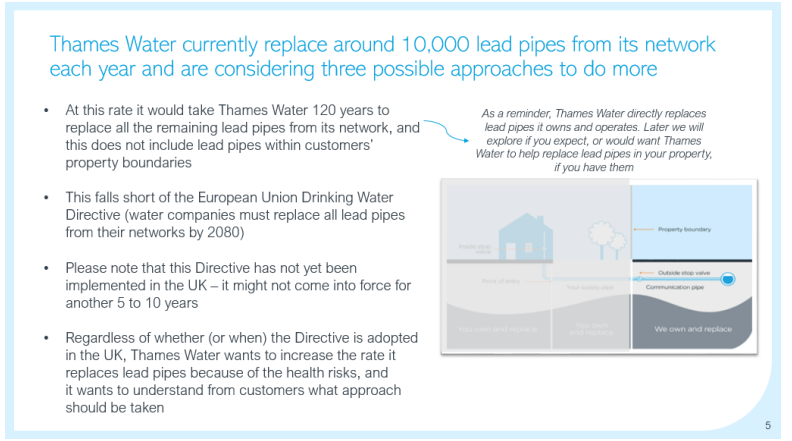
4

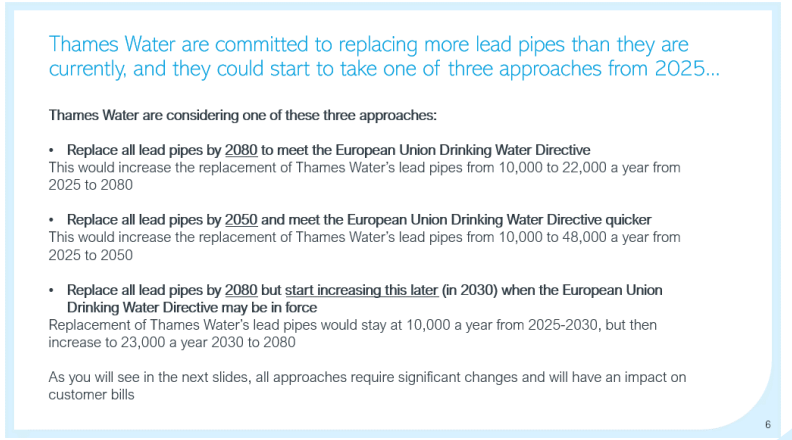
Day 2:2.1 What Thames Water have done so far to replace lead pipes & your first impressions of potential roadmaps for the future

Welcome back!

We'd now like to provide you with an overview of what Thames Water has done so far regarding lead pipes, and a brief look at of three approaches to tackling the issue of lead pipes in the future. Please read the slides below to learn more.

- How do you think Thames Water have performed in this area so far?
- Has reading this altered your perceptions of Thames Water in anyway?
- What are your first impressions of Thames Water's approaches to dealing with lead pipes
- Which (if any) approach do you think Thames Water should take? Aiming to increase replacing all lead pipes that it owns:
  - from 2025 to 2050
  - from 2025 to 2080, or
  - starting later from 2030 to 2080?
- Please explain your answer
- Do you think Thames Water will be able to hit either target? Why/ why not?
- Do you have any unanswered questions or concerns about the two approaches proposed, or about Thames Water's progress to date on these?



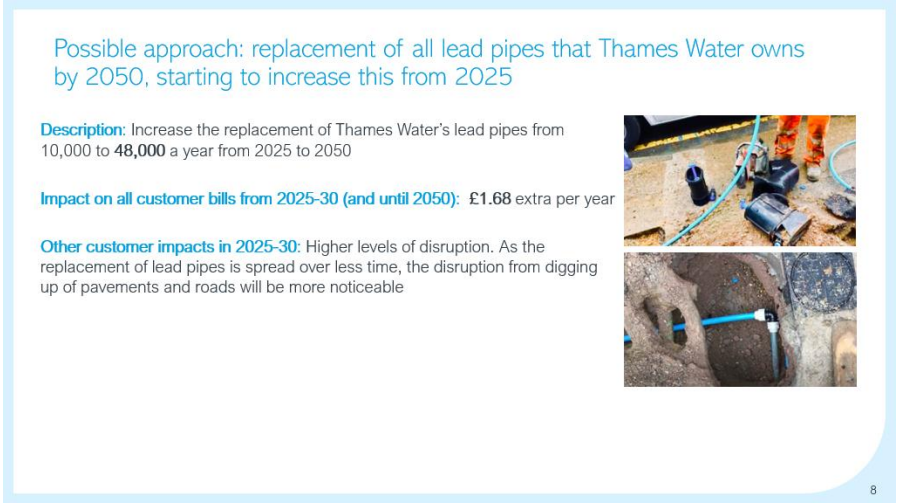


Day 2: 2.2- Potential timeframe: replace all lead pipes by 2050. Your verdict

Please take a look at the approach to increase replacing all lead pipes that Thames Water owns between 2025 and 2050.

- How acceptable/unacceptable is this approach to you? Why?
- How do you feel about how much can be done by 2050?
- How do you feel about the bill increase, based on everything you've read?

As a reminder, the average household bill for Thames Water customers was £418 in 2021-22 (so that amount may have been higher or lower for different customers, depending on things like having metered water). Also, do keep in mind that Thames Water have other initiatives as well as lead pipes to tackle in the future which` might also impact the bill (for example other actions to ensure a reliable water & wastewater service and to protect the environment).



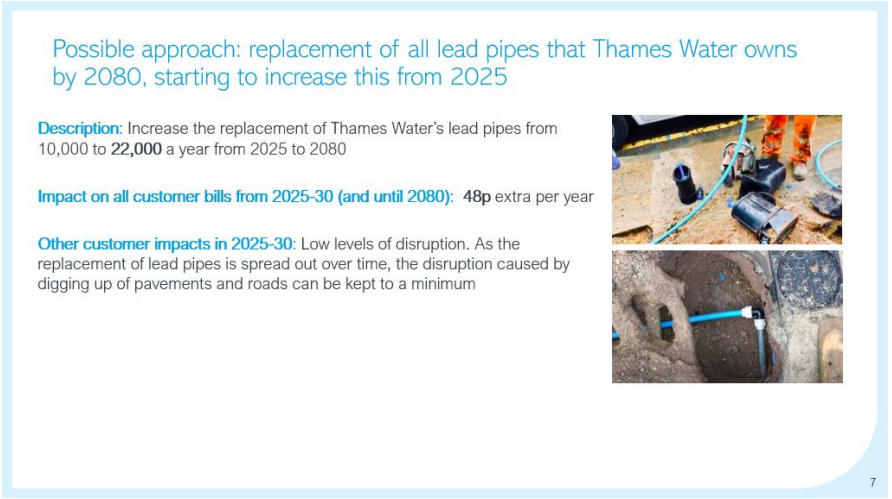
- Is there anything unclear about this, or anything else you'd like to know that would help you make a better-informed opinion about this?
- Overall, considering the benefits and costs for you as a customer, would you support or oppose this plan?
  1. I strongly support the plan
  2. I somewhat support the plan
  3. I somewhat oppose the plan
  4. I strongly oppose the plan
- Please tell us the reasons for your answer.
- Is there anything Thames Water could do to make you more likely to support this?

2.3 Potential timeframe: replace all lead pipes by 2080. Your verdict

Please take a look at the approach to increase replacing all lead pipes that Thames Water owns between 2025 and 2080.

- How acceptable/unacceptable is this approach to you? Why?
- How do you feel about how much can be done from 2030 to 2080?
- How do you feel about the bill increase, based on everything you've read?

As a reminder, the average household bill for Thames Water customers was £418 in 2021-22 (so that amount may have been higher or lower for different customers, depending on things like having metered water). Also, do keep in mind that Thames Water have other initiatives as well as lead pipes to tackle in the future which might also impact the bill (for example other actions to ensure a reliable water & wastewater service and to protect the environment).



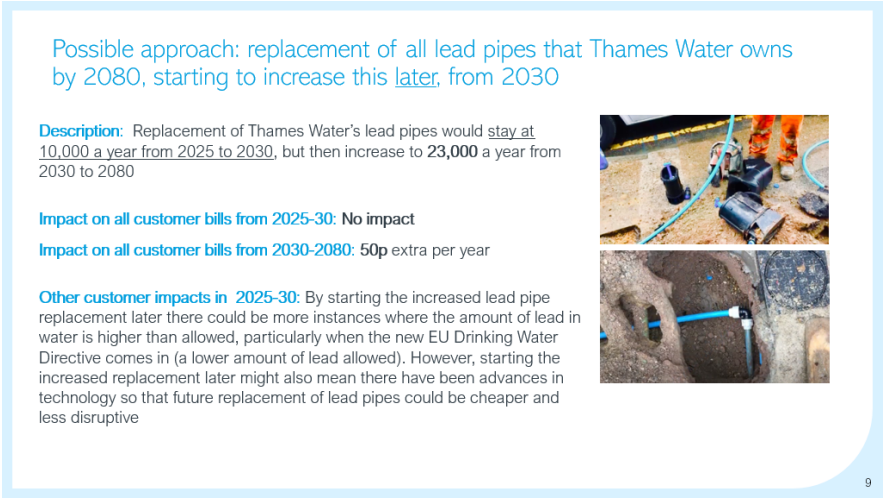
- Is there anything unclear about this, or anything else you'd like to know that would help you make a better-informed opinion about this?
- Overall, considering the benefits and costs for you as a customer, would you support or oppose this plan?
  1. I strongly support the plan
  2. I somewhat support the plan
  3. I somewhat oppose the plan
  4. I strongly oppose the plan
- Please tell us the reasons for your answer.
- Is there anything Thames Water could do that would make you more likely to support this?

2.4 Potential timeframe: replace all lead pipes by 2080, but starting later in 2030. Your verdict

Please take a look at the approach to increase replacing all lead pipes that Thames Water owns between 2030 and 2080.

- How acceptable/unacceptable is this approach to you? Why?
- How do you feel about how much can be done from 2030 to 2080?
- How do you feel about the bill increase, based on everything you've read?

As a reminder, the average household bill for Thames Water customers was £418 in 2021-22 (so that amount may have been higher or lower for different customers, depending on things like having metered water). Also, do keep in mind that Thames Water have other initiatives as well as lead pipes to tackle in the future which might also impact the bill (for example other actions to ensure a reliable water & wastewater service and to protect the environment).



- Is there anything unclear about this, or anything else you'd like to know that would help you make a better-informed opinion about this?
- Overall, considering the benefits and costs for you as a customer, would you support or oppose this plan?
    1. I strongly support the plan
    2. I somewhat support the plan
    3. I somewhat oppose the plan
    4. I strongly oppose the plan
- Please tell us the reasons for your answer.
- Is there anything Thames Water could do that would make you more likely to support this?

2.5 Which roadmap (if any) is best

Now that you have reviewed both approaches in depth, please let us know which you prefer.

1. Increase the replacement of Thames Water's lead pipes from 2025 to 2050
2. Increase the replacement of Thames Water's lead pipes from 2025 to 2080
3. Increase the replacement of Thames Water's lead pipes from **2030** to 2080
4. I can't decide
5. None of these, Thames Water shouldn't increase the rate of lead pipe replacement

- Please tell us why you selected this option

2.6 Replacing lead pipes in the home and schools

As well as the water pipes that Thames Water are responsible for, they could also help replace lead pipes inside homes and schools. Even though they are not obliged to do so, this could ensure more lead is removed from the water network by giving assistance to customers in this way. Please read the slide below to review Thames Water's proposal to make improvements between 2025 and 2030

- What is your first impressions of this proposal?
- Does it meet your expectations, exceed them or disappoint them?
- Do you think Thames Water should prioritise replacing lead pipes in schools and nurseries, homes, all or none?
- Considering the benefits and likely bill impacts for customers from 2025-2030, would you support or oppose the plan for Thames Water to replace 3,000 drinking fountain pipes in schools and nurseries?

  1.I strongly support the plan

  2.I somewhat support the plan

  3.I somewhat oppose the plan

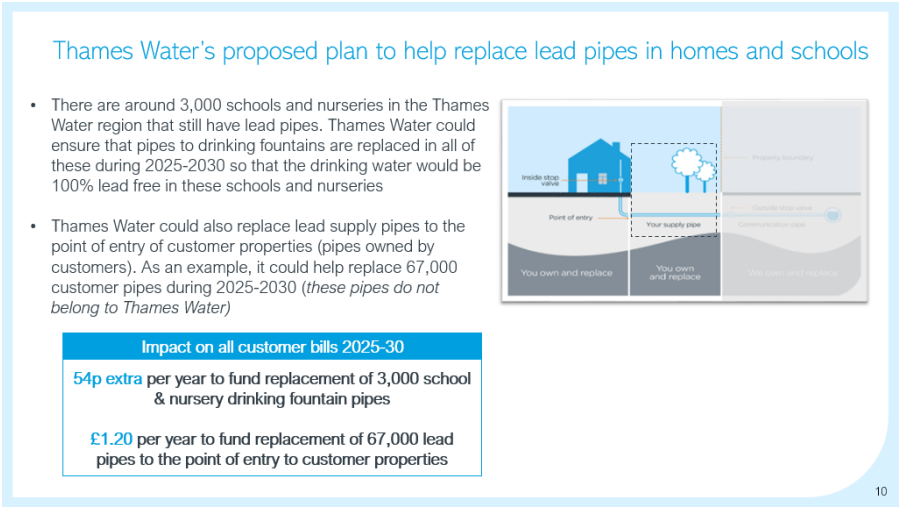
  4.I strongly oppose the plan
- Please give the reasons for your answer
- Considering the benefits and likely bill impacts for customers from 2025-2030, would you support or oppose the plan for Thames Water to replace 67,000 customer supply pipes?

  1.I strongly support the plan

  2.I somewhat support the plan

  3.I somewhat oppose the plan

  4.I strongly oppose the plan
- Please give the reasons for your answer



Wider context and final thoughts

Thanks for all of your input on this, it's been really interesting seeing everybody's comments coming through. Alongside the lead pipe initiatives that you have been discussing over the past two days, Thames Water has a number of other initiatives that they are aiming to achieve by the end of 2030, over and above the main provision of your water and sewerage services.

All of these initiatives could have a positive impact on improving both service and the environment, but they could also impact on your annual bill, as we have seen with the potential lead pipe initiatives.

Please take a look at the main extra initiatives that Thames Water could undertake over 2025-2030 and rank them in order of priority you think Thames Water should give them, for instance where you think Thames Water need to make the most improvements. So, the most important initiative for Thames Water to tackle should be no 1 and the least important initiative for them to tackle should be no 8.

[RANDOMISE ORDER]

1. Achieving Net Zero carbon emissions for its water and waste operations
2. Replacing a number of large, aging water mains that could be dangerous if they burst (for example could flood nearby basements and underground stations)
3. Replacing large sections of aging water pipework in London, rather than fixing individual leaks as they happen
4. Helping any customers with lead pipes on their properties to replace those, to eliminate the risk of lead being in their water supplies
5. Increasing the capacity of the sewer network to prevent sewer overflows into homes and businesses
6. Reducing sewer overflows into rivers by improving sewage treatment works, aiming for the number of sewage spills to be lower than what the Environment Agency allows
7. Ensuring stretches of rivers are safe for swimming in, by preventing sewer overflows into rivers in those areas
8. Reducing the potential damage to rare types of rivers (like chalk streams) by reducing the amount of water taken from them and building pipelines to connect communities to other water sources instead

- Finally, please tell us briefly why you think they should prioritise the two most important initiatives that you have ranked above.