

Shape your water future: Draft water resources management plan 2019

Report on the consultation response



**Prepared for:
Thames Water**

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1. Executive summary

Thames Water is currently developing its Water Resources Management Plan (WRMP) 2019. This sets out how the company plans to provide a secure and sustainable supply of water for its customers over the next 80 years from 2020 to 2100.

A public consultation on the plan ran between the 9th February and the 29th April 2018. Stakeholders and customers were encouraged to give their views on the plans through a variety of channels, including public meetings, an online survey and written submissions. The number of responses by channel was as follows:

- Submission by email or post - 440 (82 written responses and 358 email responses).
- Submission by questionnaire – 101 (93 online responses and 8 hard copy feedback forms).
- Customer research - 75 workshop participants; 174 responses from the online community and 2,652 responses to the 'Shape your water future' engagement tool (water services only customers).

A very brief summary of the key points raised in responses are as follows:

Developing the plan

- A range of stakeholders (including local authorities, environmental NGOs, industry, and water companies) had positive feedback about their experience of **engagement**. They generally felt that they had plenty of opportunities to hear about TW's plans and to feed in their opinions. However, there were a few concerns raised, namely that: not all relevant stakeholders had been involved (particularly non-household customers); TW had not been transparent on some issues (particularly costs and the environmental impact of some options); and the plan had changed after stakeholder engagement had ended.
- Stakeholder comments included a number of suggestions to **check and clarify assumptions and details** (e.g. ensure population projections are based on up-to-date figures; clarify how costs of options were calculated; and provide greater transparency in decision making).
- Respondents mentioned **a number of policy and legal requirements** that TW seemed not to have fully addressed in its environmental appraisal: ensuring a net gain for biodiversity; addressing carbon reduction targets; addressing Welsh legislation relevant to Severn Thames transfer; and helping to meet targets in the London Plan to do with increasing habitat and progressing towards being a zero-carbon city.
- Although Natural England was happy with TW's overall approach to the **Strategic Environmental Assessment (SEA)**, they and other stakeholders identified the following areas where more work was needed: ensuring that information in the SEA was complete, clear and factually

correct; addressing gaps and inconsistencies in how the SEA was carried out; and doing more to ensure that the environment is fully protected.

- Overall there is support to plan water resources over the **longer term**, to ensure **resilience** to drought as well as other hazards, as well as taking a **regional** perspective.

The proposed plan

- All audiences called for **more aspirational leakage targets**. Stakeholders wanted clarity on how targets would be achieved and more ambition.
- There was **strong support for demand management**. Some stakeholders called for more ambition, for example reducing the per capita consumption target at least in line with the national average, whilst others raised concerns about over-reliance on measures over which TW does not have control.
- There was some support for the **Abingdon reservoir**, to help protect the environment, and particularly chalk streams, provide increased resilience to drought/flooding and recreational benefits. However, there was also opposition and strongly expressed concern, particularly heard from local domestic customers and campaigning groups, about the social and environmental impacts.
- There was some support for the **Teddington abstraction** option as a pragmatic solution but calls for TW to ensure environmental concerns are fully considered and mitigation measures included in the plan. The Environment Agency does not support this scheme in its current form.
- As with Teddington abstraction, the main concern about **Beckton reuse** was the impact on river ecology. However, it seemed a less serious concern as it was mentioned by fewer stakeholders and with less urgency. Participants at the customer workshops were initially hesitant about this option because of its energy intensity and use of chemicals, although some saw it as a sensible use of resources.
- Some stakeholders and opponents of the reservoir queried the assumptions made in relation to **water transfer** and asked for it to be reconsidered. Other audiences were divided – some were in favour whilst others were concerned about being beholden to other water companies.

2. Introduction and background

2.1. Introduction and background

Thames Water is currently developing its Water Resources Management Plan (WRMP) 2019. This sets out how the company plans to provide a secure and sustainable supply of water for its customers over the next 80 years from 2020 to 2100.

A public consultation on the plan ran between the 9th February and the 29th April 2018. Stakeholders and customers were encouraged to give their views on the plans through a variety of channels, including public meetings, an online survey and written submissions.

2.2. Purpose of the report

Thames Water will publish a report in autumn 2018 setting out the comments received in response to the consultation, and explaining how these have been taken into account in revising the draft Plan. The report will be sent to the Secretary of State for the Environment, Food and Rural Affairs (Defra) and to everyone who participated in the consultation. It will also be published on Thames Water's website.

The purpose of the report is to summarise the consultation approach, process and main feedback. The analysis and reporting has been conducted by Community Research, an independent research company.

2.3. Consultation approach

Thames Water produced their plans in a number of versions:

- An overview document (a high level summary of the approach to developing the plan and the preferred programme).
- A technical executive summary (a detailed summary of the draft Plan which signposts the relevant section of the technical report to read more about a particular topic).
- The full technical report comprised of 11 sections, with appendices.
- All of the documents were available online and made available in hard copy.

Respondents could respond to the consultation through a range of channels including emailing or writing a freeform response; responding to an online survey or completing a hard copy feedback form. The consultation questions are listed in Appendix A.

The consultation was promoted in various ways, including the following:

- Emails sent to all stakeholders on Thames Water's contact list.
- Highlighting the consultation at existing meetings.

- Local Engagement Forums (LEFs) conducted in areas where specific issues were identified
 - These were held, throughout the consultation period, in Abingdon, Beckton, Beddington, Bicester, Bracknell, Cirencester, Richmond & Hounslow and Stevenage.
 - The forums were evening events which gave local stakeholders and customers an opportunity hear about Thames Water's future priorities and raise any issues they thought should be taken into consideration. Presentations on national, regional and local issues were made, followed by a Q&A. Local teams were also present to allow attendees to ask questions before and after the more formal part of the evening.
- Drop-in events in Oxford and Steventon (Oxfordshire)
- Tweets and Facebook posts.
- Information on the homepage of the main TW website.
- Internal communications through E-brief, TeamTalk, BlueBytes, Yammer, Posters, Weekly Huddles, Rich Picture Roll-out, Source and Clearwater email updates.

2.4. About the analysis

All email and written freeform responses to the consultation were systematically logged and coded using an agreed codeframe, which corresponded to the sections in the technical report. Responses to the survey were also coded, using a codeframe developed for each question and based on the responses received.

It should be noted that, by their very nature, public consultations are not necessarily representative of the general population. As they are open access any individual or organisation can submit their views and those who have an interest in (and who have the capacity to respond) are more likely to participate in a consultation than those who do not. For this reason, the approach to consultation analysis tends to be qualitative rather than quantitative – we are interested in the range of views held and who said what, rather than focussing on the number of responses. The main aim of the analysis is to explore areas of agreement and disagreement and the reasons given. We have, however, conducted some frequency analysis in order to understand the volume of views and the characteristics of the people with particular opinions. It is also the case that the views of the wider customer base were actively sought through research approaches in order that a more broadly representative perspective could be captured, these responses are analysed in Section 7.

Respondents' views on specific issues were often linked to their other views – for example, those opposing the Abingdon Reservoir called for other options to be considered, particularly for water transfer to be back on the table. We have highlighted this throughout the report where applicable whilst trying to avoid repetition.

In terms of the survey responses, it should be noted that not all respondents answered every question and not all responses related to the question asked. Some responses related to other consultation questions and some to issues not explicitly asked in the consultation.

Some responses included detailed technical information. It is not possible for us to include this detail in a report of this nature (but the full information is being reviewed by Thames Water and included in their Statement of Response).

2.5. Structure of the report

This report is structured to provide an overview of the feedback by channel in separate sections. This is important in order to ensure that the views of those who responded to the open access consultation (who are self-selecting) are presented separately to those who participated in more structured customer research. Those who took part in the customer workshops and who are members of Thames Water's online community cannot be grouped with other customers (because they have been given more information on the consultation context and because they have taken part in other research activities for Thames Water). Section 3 of this report gives information on the number of responses by type and where they are included in the report.

3. About the responses and respondents

This section provides details about the respondents and the type of responses received during the consultation. It also outlines the ways in which responses were received.

3.1. How responses were received

Responses were received through a variety of channels and in a wide range of formats.

Channels	Description	Summary
Submission by email or post	Respondents could submit a response by email or post. Some submitted responses to Defra and others submitted responses to Thames Water directly. These were in response to the consultation document but were freeform in that they did not respond directly to the consultation questions in turn. Some of the email responses were based on standard text provided by a campaign organiser – we refer to these as ‘campaign responses’ throughout this report.	These responses are summarised in Section 5
Submission by online survey	Respondents could submit an online response via a Citizen Space hosted website, hyperlinked from the Thames Water consultation website. This was an open access survey.	These responses are summarised in Section 6
Submission by hard copy feedback form	Respondents could fill in a hard copy feedback form (which had the same questions as the online survey).	These responses are summarised in Section 6
Customer research feedback	Feedback relevant to the consultation was also received through research and engagement activities conducted by Thames Water during the consultation period. The views of research participants have been kept separate to the other, open access responses. This research included: <ul style="list-style-type: none"> • Customer workshops conducted in four locations. • Feedback from Thames Water’s online community who completed a version of the online survey. • Feedback via the ‘Shape your water future’ engagement tool. This tool covered many wider aspects of Thames Water’s Business Plan but included relevant questions on both leakage and drought. 	These responses are summarised in Section 7

3.2. Number of responses

The number of responses by channel was as follows:

Channels	Number of responses
Submission by email or post	440 (82 written responses and 358 email responses)
Submission by online survey	93 responses
Submission by hard copy feedback form	8 responses
Customer research	75 workshop participants 174 responses from the online community 2,652 responses to the 'Shape your water future' engagement tool (water services only customers)

3.3. About the respondents

Submission by email or post

The number of written and email responses by stakeholder type were as follows:

Written and email responses by stakeholder type	Number of responses
Individual	353
Charity/campaigning organisation	36
Local authority	22
Industry/landowner	8
Regulator	7
MP	4
Water company	4
Other	3
Not stated	3
Total	440

Of the 358 email responses, the number of 'campaign responses' i.e. email responses which were based on standard text provided by the campaign organiser and/or cited a stakeholder organisation's response were as follows:

Email campaign responses	Number of responses
Cited Amwell Magna Fishery response	25
Cited Angling Trust response	15
Chalk streams - reduced abstraction on the Lea (all responses had the same text)	62
Cotswold Canals - in favour (i.e. mentioned the Cotswold Canals Trust response; used the same text; used the same language). There were around 100 further responses that were in favour of the Cotswold Canals but were individually phrased.	111

There were a number of responses opposing the reservoir which had a similar summary and made reference to the same points but these have not been included in the table above as they were worded differently.

A list of stakeholder organisations and MPs who responded to the consultation (through any channel) is provided in Appendix B.

Submission by online survey/feedback form

The majority of respondents who responded via the online survey or feedback form were household customers, as shown in the table below.

Online survey/feedback form responses – stakeholder type	Number of responses
Thames Water household customer	69
A representative of a business	2
Developer or housebuilder	-
Stakeholder of Thames Water	5
Thames Water employee (not a customer)	2
Thames Water employee (also a customer)	7
Other	8
Total	101

The highest proportion of respondents was located in Oxfordshire and Berkshire, of which 26 were based in OX13.

Online survey/feedback form responses – geographic location	Number of responses
Surrey and Hampshire	2
Gloucestershire and Wiltshire	6
Oxfordshire and Berkshire	55
Bucks, Beds, Herts and Essex	8
East London	2
West London	4
North East and North West London	5
South East and South West London	6
Total	101

Customer research

Online community members are participants who have taken part in research and engagement activities conducted by Thames Water and have expressed a willingness to continue giving their views via an online forum. They are, therefore, more informed about water issues and Thames Water than typical customers. The majority of online community respondents were household customers and just over half were based in London, as shown in the tables that follow.

Online community – stakeholder type	Number of responses
Thames Water household customer	153
A representative of a business	11
Developer or housebuilder	-
Stakeholder of Thames Water	-
Thames Water employee (not a customer)	-
Thames Water employee (also a customer)	-
Other	10
Total	174
Online community – geographic location	Number of responses
Surrey and Hampshire	23
Gloucestershire and Wiltshire	13
Oxfordshire and Berkshire	30
Bucks, Beds, Herts and Essex	17
East London	22
West London	11
North East and North West London	28
South East and South West London	30
Total	174

A representative sample of household customers was asked to complete the **'Shape your water future' engagement tool** which indicated their preferences in terms of a number of service areas, including drought and leakage. Their views on these relevant areas have been included in this report. The breakdown of these responses by location is shown below.

Engagement tool – geographic location	Number of responses
Surrey and Hampshire	133
Gloucestershire and Wiltshire	76
Oxfordshire and Berkshire	387
Bucks, Beds, Herts and Essex	85
London	1,971
Total	2,652

Four workshops of household customers were conducted in areas potentially affected by specific proposals in the draft WRMP. Sessions were convened in Abingdon, Teddington, Lechlade and East London (Stratford). Each session lasted three hours and the total number of attendees was 75 household customers. These were recruited to ensure a broadly representative spread of lifestages and demographics. Members of campaigning organisations were specifically excluded in order to explore the views of the 'silent majority' i.e. those who had not already submitted a response to the consultation and / or those who were not members of campaigning organisations (either in favour or opposing proposals in the draft WRMP).

4. Overview of responses

The key points raised by each audience in turn are outlined below:

4.1. Open access responses

Submission by email or in writing – stakeholders (including regulators)

- There were calls for TW to continue to explore **raw water transfers** via the River Severn, as part of national and regional approach to managing water resources. Reconsider transfers via the Cotswold Canals, a popular option with strong backing of the canal community.
- Opinion was divided with both strong positive and negative views about **Abingdon Reservoir**. Supporters focused on protection of the environment, specifically chalk streams, and increased resilience to drought for TW and neighbouring companies. Many of those who support the reservoir urged TW to build it earlier. The opponents raised concerns about over capacity, local social and environmental impacts, and TW's bias in choosing the scheme.
- With regard to the **Teddington abstraction** stakeholders wanted TW to ensure environmental concerns are fully considered, re-consider whether the scheme should be included in the preferred plan, and if so, find effective mitigation measures.
- **Reducing leakage** is important in its own right and to increase acceptance of other options. Some stakeholders supported more ambition, suggesting increasing the target to meet customers' expectations. Others raised concerns about over-reliance on leakage reduction, and the risks around this for customers and environment, again specifically chalk streams. It is also important to explain how the leakage target will be achieved, in light of recent performance.
- Stakeholder comments included a number of suggestions to **check & clarify assumptions & details** (e.g. ensure population projections are based on up-to-date figures; clarify how costs of options were calculated; and provide greater transparency in decision making).
- Many stakeholders raised **high level/strategic issues**. They wished to see TW continue with and build on regional planning; do more to meet the commitment on ending abstraction from chalk streams; aim to increase resilience earlier and address non-drought resilience and reduce target PCC, at least in line with national average.

Submission by online survey/feedback form

- There was a call for **more ambitious leakage** reduction targets and strong support for greater focus on demand management. There was some acknowledgement (mainly by stakeholders and employees) of the impact of tackling leakage in terms of disruption, but still a call for more stretching targets.
- Some felt prioritising **action to reduce demand** may mean that new

water supply may not be required. This was particularly an argument advanced by those opposed to the reservoir (who also felt that desalination and water transfer should be considered if new supply is needed). There was some negativity about the perceived **selective use of data** and the fact that all the options on the table include the reservoir.

- There was some more general support for the **transfer from the River Severn** (with greater collaboration amongst water companies), although some expressed a strong preference for TW to be self-sustaining rather than rely on other water companies. Those opposed to the idea also cited the environmental impact and cost.
- Most were in favour of the **Teddington Abstraction** option (if the environmental impact can be mitigated). However, some respondents were strongly against this option – fearing the adverse environmental impact and/or questioning the choice of location.

4.2. Customer research responses

Customer workshops

- Participants were positive about the **overall plans**. They spontaneously identified water supply as being a key future issue - but had not realised the extent of the potential deficit. They welcomed the fact that the issue was being addressed via a number of different solutions.
- Most felt that **leakage** targets did not go far enough. They also felt that the metering programme could be more ambitious.
- Of the different water resource options, consumers were most positive about the **reservoir** (this was true in Abingdon and elsewhere) as they saw it as providing a significant source of water, but also offering additional benefits such as recreational activities. However, they wanted reassurance that infrastructure would be in place for the build and that those currently living there would be treated fairly.
- Once they understood how the option would work, consumers were broadly positive about **Teddington abstraction** as they saw it as a pragmatic solution making the most of existing resources. However, there were some concerns about the environmental impact and the need to engage with the community early in the decision making process.
- **Water transfer** as a concept was somewhat more polarising, with some seeing it as an obvious solution while others voiced concern about its reliability.
- Participants were initially hesitant about **water reuse** because of its energy intensity and use of chemicals, although some saw it as a sensible use of resources.
- While some were positive about the **aquifer scheme**, most felt that the amount of water this option generated was negligible and it was better to focus on the options that generated greater water supply.

Online community responses

- Online community members were reassured that Thames Water was planning for **severe drought**, but most felt that works should be speeded up to 2027.
- Many emphasised the importance of water efficiencies both in terms of **educating customers** but also reducing **leakage**.
- Most community members felt that Thames Water's approach to developing their plan was sound, in that it reflected the priorities of customers, and they felt that they understood how decisions had been made. They were broadly positive about the **overall proposed plan**, assuming it can be delivered without a significant cost impact for customers.
- Community members were largely positive towards the idea of **Teddington abstraction**, although many wanted reassurance about the environmental impact, and others wanted more information about how the option would work.
- Views about **water transfer** were more mixed – while many liked the idea, others voiced concern about the potential impact on bills, and others about what would happen in a drought.

'Shape your water future' engagement tool responses

- For **leaks**, 52% chose a higher service level than the proposed 15% reduction in leakage
- For **drought**, 55% chose a service level within a year of the proposal (to protect all customers in the event of severe drought by 2029 -2030)

5. Written and email responses

This section outlines the views of stakeholder organisations and individuals who emailed their response or who submitted a written response. Their responses were freeform in the sense that they did not reply to the consultation questions in turn (as per those who completed the online survey).

5.1. Stakeholder engagement

5.1.1 Positive feedback

On the whole, stakeholders involved in the development of draft WRMP commented that the engagement had been well run. This feedback came from a range of stakeholders including the following.

- Local authorities (e.g. Cotswold District Council, Wokingham Borough Council).
- Campaigning organisations (Angling Trust and associated organisations and individuals, London Chamber of Commerce and Industry, Royal Society for the Protection of Birds, Thames River Trust).
- Industry (RWE Generation).
- Water companies (Affinity Water, Bristol Water, Waterlevel).
- Other stakeholders (TW's Consumer Challenge Group, Port of London Authority).

This positive feedback covered all aspects of the engagement, as summarised in Table 5.1.

5.1.2 Negative feedback

Two main concerns were raised when commenting on the stakeholder engagement, summarised in Table 5.1: not all relevant stakeholders had been engaged, and the plan was changed after the stakeholder engagement had ended. Both concerns were mentioned occasionally.

However, when discussing other aspects of the draft WRMP, consultees commented on the lack of transparency on certain issues. For instance, when commenting on transfers via the Cotswold Canals, respondents repeatedly commented that Thames Water had not been prepared to share costs in an open way.

5.1.3 Uncertainty

There was a little uncertainty expressed about how the results from this written consultation would be used.

"We hope that all issues raised are taken account of and not just used as response figures to state that you let all parties have there [sic] say."
(Gerrards Cross and Uxbridge District Angling Society)

Table 5.1 Summary of feedback about stakeholder engagement

	<i>Positive feedback</i>	<i>Negative feedback</i>
Amount of engagement	There was plenty of opportunity for engagement. <i>"We would like to commend the level of stakeholder engagement that Thames Water has sought through the development of this latest WRMP."</i> (Angling Trust)	Not mentioned.
Timing of engagement	Stakeholders were involved throughout. <i>"We have been pleased to have been fully engaged within Thames Water's stakeholder programme throughout the course of development of WRMP19."</i> (RWE Generation UK)	Not mentioned.
Types of events	TW ran a range of events including general stakeholder events, technical panels, and bespoke meetings (e.g. with Royal Society for the Protection of Birds, Blueprint for Water, and London Chamber of Commerce and Industry).	Not mentioned.
Content of engagement	TW provided a thorough explanation of the plan and the reasons for it. <i>"This engagement has helped convey both the challenges faced by the company and the range of solutions being considered."</i> (Royal Society for the Protection of Birds)	Lack of transparency on certain issues, e.g. costs of supply options.
Direction of engagement	Engagement has been two-way with TW informing stakeholders about their plan and asking for feedback. <i>"During this process ample opportunity has been provided for the introduction of our views and for the explanation and review of Thames' proposals."</i> (Waterlevel)	Not mentioned.
Stakeholders involved	A wide range of stakeholders were involved. <i>"LCCI held a roundtable in order to provide feedback relating to the proposals in the draft WRMP. There were 18 attendees from a wide range of businesses."</i> (London Chamber of Commerce and Industry)	Not all relevant stakeholders were involved. <i>"Thames's engagement with Non Household customers and particularly retailers has been more limited (than with domestic customers)."</i> (TW's Consumer Challenge Group)

		<i>"At no point has our client, who is a key landowner of this site, been contacted to discuss this proposal. This is a significant procedural oversight which questions the robustness of the deliverability assessment."</i> (Earl of Plymouth Estate)
Staff involved	The TW team were professional and responsive. <i>"We have been impressed by the professionalism of the relevant experts (Thames own employees and their consultants) and by their willingness to develop and explore methodologies that help in the analysis of the relevant issues."</i> (Waterlevel) <i>"Richard Aylard, Director for External Affairs and Sustainability at Thames Water, presented a summary of the draft WRMP and then invited questions from the audience."</i> (London Chamber of Commerce and Industry)	Not mentioned.
Level of influence & impact	Not mentioned.	The plan changed after the stakeholder consultation had ended. <i>"It was with some regret that we noted that the end result of all of the analysis, and of the processes and conclusions that all stakeholders had signed up to, was fine-tuned at a late stage in the proceedings."</i> (Waterlevel)

5.1.4 Ongoing engagement

There were calls for the engagement to continue beyond the WRMP consultation. This would build on partnerships that had been developed. It would also give stakeholders the opportunity to comment on any substantial changes made to the plan. This applied particularly to the Severn Thames Transfer, with several stakeholders (e.g. Natural Resources Wales and Bristol Water) asking for further discussion if TW decided to include it in the revised plan.

"As you are aware the Council has been working with Thames Water on its Water Cycle Study and other work to support the drafting of the new Cotswold District Local Plan... We are keen to ensure that this partnership work continues, particularly in the light of the concerns raised in the WRMP19 around short, medium and long term supply-deficits in our area, which forms part of the Swindon and Oxfordshire (SWOX) Water Resource Zone."(Cotswold District Council)

"Should there be any notable changes between the draft and final plan with respect to the preferred supply side options, in particular around proposed inter-company transfers, we urge that further stakeholder and customer engagement is undertaken."(WWF)

5.1.2 Customer engagement

Three stakeholders provided detailed comments on the company's customer engagement: TW's Consumer Challenge Group, Ofwat, and University of East Anglia. A few other stakeholders made brief comments. They identified areas of good practice and problematic areas, summarised in Table 5.2.

Positive feedback

TW's Consumer Challenge Group had positive feedback about the customer engagement, stating it had been thorough and sustained, used a range of methods and heard from a range of customers, as summarised in Table 5.2.

Negative feedback

Several concerns with the customer engagement were mentioned, many more than was the case with the stakeholder engagement. They are summarised in Table 5.2. To address these concerns, stakeholders requested more clarity about how research had been carried out and further research to fill gaps and address perceived methodological problems. They noted that TW was already planning research to address some of the issues they highlighted.

Table 5.2 Summary of feedback about customer engagement

View related to:	Positive feedback	Negative feedback
Procedure	<ul style="list-style-type: none"> • TW used a variety of different and sometimes innovative approaches; and operational interactions as well as research. 	
Timing	<ul style="list-style-type: none"> • TW consulted customers over almost three years while developing the WRMP. 	
Content		<p>Research on resilience</p> <ul style="list-style-type: none"> • It is not clear how resilience was discussed with customers and why they had difficulty understanding the concept. • TW did not explore non-drought resilience or the impact of changing the level of resilience on cost, deliverability, and affordability of the plan. • TW did not give research participants a feel for how water stress differs across the region. <p>Research on preferred options</p> <ul style="list-style-type: none"> • It is not clear whether TW gave customers performance information as part of the research. • TW did not explore views in detail about water transfers to neighbouring companies. They are about to begin research on this soon. • TW did not explore views about some less well known issues that customers might possibly be interested in, given their concern for environmental protection e.g. chalk streams and catchment management.

		<p>Research on the preferred programme</p> <ul style="list-style-type: none"> • TW gave customers information about the bill impact for each element separately, rather than for the package as a whole. They are currently planning research on this. <p><i>"The attractiveness of the preferred plan over the least cost solution would seem more robust if consumers had additionally been asked which of the overall plans (including their full costings) was preferable."</i> (University of East Anglia)</p>
<p>Sample</p>	<p>TW was careful to ensure the appropriate demographic and geographic split of customers taking part in their research.</p>	<ul style="list-style-type: none"> • There was limited engagement with retailers and non-household customers. <p><i>"As part of the PR19 business plan process, water companies are required to consult with their non-household customers. We'd like to see this better reflected in the final WRMP and used to inform your approach on water efficiency work with retailers and businesses."</i> (Waterwise)</p> <ul style="list-style-type: none"> • There was limited engagement in areas where new infrastructure is planned. <p><i>"We are disappointed that Thames Water has decided to focus its community events on areas where it already has links, mainly around its existing treatment works, rather than seek the views of local people who would be affected by new infrastructure."</i> (London Councils)</p>
<p>Interpretation and use of results</p>	<ul style="list-style-type: none"> • TW listened to its customers. <p><i>"The Consumer Challenge Group welcomes the fact that Thames has amended its leakage goal between submitting its draft of the WRMP and publishing the revised draft. The Consumer Challenge Group feels that Thames has listened to customers and to the</i></p>	<ul style="list-style-type: none"> • TW did not really listen. <p><i>"Whilst you make it clear in your documentation that you have extensively consulted on your proposals, I am far from convinced that you have really listened, and am concerned that there may be a degree of 'lip service' in the process. It feels to me that ultimately you are going for the options which offer you lowest perceived risk and cost irrespective of what others really think</i></p>

	<p><i>Consumer Challenge Group.” (TW’s Consumer Challenge Group)</i></p> <p><i>“Examples of best practice include the use of customer participation to enhance the delivery of demand management projects.” (Ofwat)</i></p> <p><i>“Thames Water has clearly listened to customers in developing water efficiency options to 2020. This was the top preference for customers in London and the Thames Valley.” (Waterwise)</i></p>	<p><i>and what the broader consequences or benefits might be.” (Individual)</i></p> <ul style="list-style-type: none"> • TW assumed that customers’ preference for demand management options implies that they will reduce consumption when exposed to these options. This is not necessarily the case. <p><i>“Households stated preferences for DM options, especially water efficiency campaigns, does not guarantee households will respond in the desired fashion when subject to an intervention.” (University of East Anglia)</i></p>
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5.1.3 General comments

There were several comments raised about the process used to prepare the draft WRMP and about the document as a whole.

There were some positive comments, requiring no action from TW from several stakeholders, including Ofwat. For instance:

“Overall this seems to be a comprehensive piece of work which deals with many options in a systematic and organised manner.” (Buckinghamshire County Council)

“Thames Water has applied the resilience metrics developed by the Water Resources South East (WRSE) group to test 14 different event hazards, such as flooding, asset failure and water quality, against supply availability. This is an example of good practice.” (Ofwat)

However, there were also some concerns that stakeholders recommended TW should address. They included the following:

- Ofwat identified two basic concerns: there had been limited explanation of the differences between the 2014 and 2018 methodology; and the quality of Board engagement.

"There are significant differences in the data, methods and assumptions used for the draft plan when compared with the previous plan in 2014. As this is not fully articulated in the narrative it is hard to track the delivery of the previous plan and understand the extent of the changes. For example, we would like to see more explanation of why, even with a plan in place, there are some deficits forecast in some zones very early in the planning period (2020-21)." (Ofwat)

"There is some evidence provided of engagement with the Thames Water Executive Management Team and the Board during the development of the draft plan and its approval. However, given the inconsistencies and late decisions in the draft plan (such as the leakage ambition policy) we have concerns about the quality of Board engagement and assurance." (Ofwat)

- Vale of White Horse District Council argued that the WRMP would need to go to public inquiry.

"Given the scale and magnitude of Thames Water's proposal... the Council is of the firm view that a public inquiry should be held to further examine the draft WRMP to ensure a correct process has been followed and the implications for each 'option' have been fully assessed and explored in an appropriate level of detail." (Vale of White Horse District Council)

5.2. Water resources programme 2015-2020

Stakeholders made some comments in their responses about TW's performance to date against their current plan which runs until 2020. However, these were almost always made alongside comments about TW's new draft plan so they are discussed elsewhere in this report.

5.3. Current and future demand for water

This section discusses stakeholders' comments about future demand including: population and property projections (section 5.3.1), forecasts of household demand (section 5.3.2), forecasts of non-household demand (section 5.3.3).

5.3.1 Population and property projections

There were numerous comments about TW's population and property projections. They came from the following types of stakeholders, with by far the most comments from local authorities.

- Local authorities (Cherwell District Council, Dacorum Borough Council, Drayton Parish Council, East Hendred Parish Council, London Assembly Environment Committee, Oxfordshire County Council, South Oxfordshire District Council, Swindon Borough Council, Wokingham Borough Council, Wycombe District Council).
- Regulators (Environment Agency and Ofwat).
- Campaigning organisations (Angling Trust, CPRE, GARD, and Wantage and Grove Campaign Group).
- Other organisations (National Farmers Union).
- Some individuals opposing Abingdon Reservoir.

Stakeholders' comments fell into four broad groups: projections are fine; projections seem fine but need further checking or updating; projections are too low; or projections are too high. Each of these views is summarised in Table 5.3. Please note that comments relating to projections for the next 20 years and the next 80 years are not differentiated because for some comments, it was not clear which period they related to.

Stakeholders who believed the projections were too high argued that this undermined the draft WRMP as a whole and the need for Abingdon Reservoir in particular. They suggested that TW should take the following actions.

- Review the plan using lower projections or a range of population projections to determine investment options.
- Consider reducing the size of Abingdon Reservoir to suit the lower population projections.
- Wait, say, 5 years before committing to Abingdon Reservoir, until it is clear what impact of Brexit has had on population growth.
- Consult again on a revised plan, based on revised projections.

5.3.2 Forecast of household demand

In contrast to the numerous queries about population projections, there were only a few queries about the forecast of household demand.

- Ofwat recognised that industry guidance had been followed but suggested that more evidence was needed for TW's forecast of London's per capita consumption (PCC) as it was differed from expectations.
- Drayton Parish Council argued that the PCC forecast was overestimated as it had not adequately taken into account measures that Government might take to reduce demand.

"TW's figures assume no Government action to encourage lower levels of water consumption. With climate change on the way, and increasing

concern about water shortages worldwide, it seems probable that over the next 20 years, Governments may seek changes in building regulations, or legislate in other ways to aim at reducing overall levels of consumption.”(Drayton Parish Council)

5.3.3 Forecast of non-household demand

There were a few queries about the forecast of non-household demand.

- Again, Ofwat recognised that industry guidance had been followed but suggested that more evidence was needed. In particular, it was not sufficient to forecast non-household demand using a statistical model only, so TW should engage with large users or retailers to enhance or validate their forecast.
- The National Farmers Union was concerned that demand associated with food production and farming had been substantially underestimated, and gave a detailed and well evidenced explanation about their concerns. They called for much greater scrutiny of the demand forecast for food production and farming.
- Buckinghamshire County Council asked whether the demand associated with new infrastructure projects (e.g. Heathrow, HS2, and Western Rail Link to Heathrow) had been taking into account and if not, suggested it should be included in the WRMP.

Table 5.3. Views about population and property projections

View	Stakeholders expressing this view	Reasons for this view
Projections are fine	<ul style="list-style-type: none"> • Angling Trust • London Assembly Environment Committee • Cherwell District Council • Swindon Borough Council 	<ul style="list-style-type: none"> • Projections align with local authority figures. • Projections were produced by leading demographer. • TW has consulted on developments likely to result in high growth in the near future.
Projections seem fine but need checking or updating	<ul style="list-style-type: none"> • Ofwat • Dacorum Borough Council • Wokingham Borough Council • Wycombe District Council 	<ul style="list-style-type: none"> • Industry guidance was followed but more comparisons are needed with up-to-date local authority figures or other independent forecasts. • LA local plans are currently being updated so TW figures will need to be updated. • Other plans are being developed (e.g. related to the Oxfordshire Growth Deal) and these will need to be reviewed in 5 years for the next WRMP.
Projections are too low	<ul style="list-style-type: none"> • Environment Agency • Oxfordshire County Council • South Oxfordshire District Council 	<ul style="list-style-type: none"> • Projections are lower than up-to-date LA local plan figures (e.g. for London and South Oxfordshire), partly because TW reduced projections after the draft WRMP was published. • TW has not yet taken into account growth not detailed in the local plans (e.g. Oxfordshire Growth Deal).
Projections are too high	<ul style="list-style-type: none"> • Campaign to Protect Rural England (CPRE) • Group Against Reservoir Development (GARD) • Wantage and Grove Campaign Group • Drayton Parish Council • East Hendred Parish Council • Three individual opponents to 	<ul style="list-style-type: none"> • Projections based on LA figures are too high as LA growth plans are aspirational rather than realistic (e.g. in last 5 years LA growth plans for Oxfordshire were 2.5 times ONS projections). • It is impossible to predict the impact of Brexit on population. • After the draft WRMP was published, TW reduced projections in line with ONS figures but did not change the plan.

	Abingdon reservoir	
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5.4. Current and future water supply

Section 5.4 discusses stakeholders' responses about TW's assessment of current water available for use (5.4.1), sustainability reductions (5.4.2), drought and risk (5.4.3), and regional planning (5.4.4). There were very few comments on other aspects of the baseline supply forecast, besides sustainability reductions, so they are not discussed here.

5.4.1 Current water available for use

The Environment Agency, Ofwat and GARD highlighted the need for more robust calculations of current water available for use and suggested how this might be achieved. The Environment Agency and Ofwat also made suggestions about how to improve baseline supply, by considering how to reduce outage and investigating treatment works with high process losses. These views are summarised in Table 5.4.

Table 5.4. Challenges to the calculation of current water available for use

Challenges	Example quotes
<p>Deployable output Ensure the calculation of deployable output is robust. E.g. ensure that supplies from all schemes included in the preferred plan are secure; ensure that all sources are included in the modelling; and consider deployable output from separate schemes conjunctively.</p>	<p><i>"In WRMP14, the deployable output of London's supplies was underestimated by about 150Ml/d. Although this huge discrepancy has subsequently been corrected, it is indicative of the scale of uncertainty surrounding TW's deployable output assessments."</i> (GARD)</p> <p><i>"There is ongoing work to improve the assessment of deployable outputs. It is noted in the draft plan that baseline supply increased by 6% due to modelling updates since the last plan, highlighting the sensitivity to these changes."</i> (Ofwat)</p> <p><i>"By not considering the (Fobney and Shalford surface water sources) conjunctively, the company may under or over-estimate deployable output."</i> (Environment Agency)</p>
<p>Process water losses Improve the assessment of process water losses.</p>	<p><i>"Process water losses from treatment works range from 3% to 15% of their output. TW should investigate further the works which are outliers and have process losses greater than 10%."</i> (Ofwat)</p>
<p>Outage Fully explain the outage assessment, and consider options to reduce outage.</p>	<p><i>"The company has not considered how it could reduce outage, despite a 50% increase in outage allowance in some resource zones since the last plan."</i> (Environment Agency)</p>

5.4.2 Sustainability reductions

Concern about chalk streams

Several stakeholders (listed below) expressed their very serious concerns about over-abstraction impacting on chalk streams. This issue was raised by environmental NGOs, organisations caring for rivers, and individuals with some interest in chalk streams (e.g. anglers, people living on canal boats, people living near rivers). Several illustrative quotes are given in Table 5.5.

- Environmental organisations (CPRE, Groundwork South, Royal Society for the Protection of Birds, WWF).
- Organisations caring for rivers (Action for River Kennet, Amwell Magna Fishery, Chilterns Chalk Streams Project, Darent River Preservation Society, River Chess Associations, River Thames Society, South East Rivers Trust).
- More than 50 individuals.

Table 5.5. Quotes illustrating concern about chalk streams

<i>Example quotes about rivers in general</i>	<i>Example quotes about specific rivers</i>
<p><i>"It is impossible to find a single river in the south eastern region of England that is not suffering extensive environmental damage brought about by the impact of water abstraction." (Amwell Magna Fishery)</i></p> <p><i>"The chalk aquifers are one of England's great assets and belong to the nation. They support some 200 chalk streams which represent about 80% of those anywhere in the world. But 70% of these are failing the WFD, mainly due to over abstraction and lack of biodiversity." (Darent River Preservation Society)</i></p> <p><i>"Water supplies (in the south east) are becoming less sustainable as populations increase, along with the demand on our river and groundwater systems. The Colne Catchment currently endures the consequences of this, with many of the waterbodies in the catchment now running dry for longer periods than ever previously recorded. This has a detrimental impact on local wildlife and affects local people's enjoyment of the river network." (Groundwork South)</i></p>	<p><i>"I have a canal boat on the beautiful River Lea in east London and am therefore especially appreciative of the fact that the chalk streams and rivers of SE England – including the River Lea and its tributaries – are a globally rare habitat. They should be thriving corridors of biodiversity. Instead most of them are in unsatisfactory condition. The causes of this poor condition include over-abstraction, leading to low flow levels, and pollution from misconnected drains." (Individual)</i></p> <p><i>"The future plans of Thames Water have a huge bearing on the globally rare chalk streams that flow from the Chilterns, including the River Ver. In 2017, a year when no drought was declared, large sections of these chalk streams were completely dry. Despite a relatively wet 2017/8 winter this situation widely persists. On the Ver we have seen growing stretches of dry river bed and greatly diminished flows, resulting in loss of habitat for invertebrates, fish, birds and mammals, and a build-up of smothering silt. It is frightening to contemplate just how bad it will be if even a 1 in 10 drought</i></p>

	<i>event occurs.”(Individual)</i>
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Challenges

As a result of these concerns, stakeholders welcomed TW’s ambition to protect chalk streams, as expressed in their CEO’s stated commitment to stop abstraction from all chalk streams. However, they felt that the draft WRMP did not reflect this ambition. They argued that it did not go far enough, did not move fast enough, or was not clear enough about what steps would be taken. Their four main challenges to TW’s approach to protecting chalk streams and dealing with sustainability reductions are summarised in Table 5.6.

Table 5.6. Challenges to TW’s approach to protecting chalk streams

Challenges	Example quotes
<p>Take action sooner Several stakeholders recommended that TW should act sooner than planned.</p>	<p><i>"In the plan there is action to reduce abstraction from the Hawridge pumping station at the head of the River Chess Catchment by 6.8 mega litres per day in 2025. This will have a beneficial impact on flows in the Chess. We would like to see this approved and where possible advanced for immediate implementation.”(River Chess Associations)</i></p> <p><i>"On the Hogsmill river, Thames Water has recently attended a Catchment Partnership meeting, along with SES Water, to review their abstractions as a clear low flow issue has materialised in the last two years. It is imperative that Thames Water fully investigate this alongside SES Water and the Catchment Partnership in PR19. It would be unacceptable to leave this until PR24.” (South East Rivers Trust)</i></p>
<p>Reduce abstraction in preference to mitigation Several stakeholders recommended that TW should reduce abstraction rather than trying to mitigate its effects, or at least that TW should increase the amount they planned to spend on mitigation. Several stakeholders doubted whether the planned mitigation measures would be sufficient (including Darent River Preservation Society, Royal Society for the Protection of Birds, SERT,</p>	<p><i>"As previously, reducing abstraction has been dismissed as 'uneconomic'. Instead, some cosmetic mitigation has been proposed to make the best of the dwindling flow. Once these rivers have gone, they’ve gone.” (Darent River Preservation Society)</i></p> <p><i>"The plan states that where it is not cost-beneficial to reduce abstraction, river restoration measures are being pursued. We would like to explore this further with Thames Water and understand the basis for the cost-benefit analysis, what river restoration entails,</i></p>

and WWF).	<i>and how its success will be monitored.”(WWF)</i>
<p>Partnership working Working with other water companies and environmental groups was seen as essential for addressing the issue. Several stakeholders expressed a willingness to work with TW on reducing abstraction.</p>	<p><i>"We are committed to continue working with Thames Water on our joint AMP6 investigation and options appraisal in the Upper Chess catchment and any future requirements that this may involve.”(Affinity Water)</i></p> <p><i>"The challenge that I would like Thames Water to set for itself is: How do we reduce all abstraction from the aquifer and satisfy our customers? Make contact with me, with the South East Rivers Trust, with Darent River Preservation Society or with the North West Kent Countryside Partnership. Any of us can bring the other agencies into the same fold should you wish to find this solution.”(Individual concerned about the Darent)</i></p>
<p>Clarify their approach to Sustainability Reductions in the plan To make the plan clearer, Environment Agency and Ofwat asked for the sustainability reductions to be included in the baseline supply forecast, rather than in several alternative scenarios. (Environment Agency acknowledged that the approach taken in its draft WRMP had been agreed with them prior to submission.)</p>	<p><i>"The Water Industry National Environmental Programme (WINEP) abstraction licence changes have not been fully incorporated in the baseline forecasts and instead have been presented as three scenarios. In the London zone, which faces the largest challenge, the reduction could range from 25-125 Ml/d. Given the potential significance of this impact, the discussion of these reductions and their impact on the programme is not presented sufficiently clearly in the draft plan.”(Ofwat)</i></p>

5.4.3 Drought and risk

Support

On the whole, stakeholders welcomed TW’s aim to be resilient by 2030 to a 1 in 200 year drought.

"We support Thames Water’s proposals to seek to maintain all of its customers’ water supply in a severe drought (one in 200 years drought). We think this is an appropriate level of drought to be planning for, and an appropriate response. We believe that planning for this to happen by 2030 is the appropriate balance of resilience without adversely affecting customer bills.”(London Councils)

They argued that increasing resilience was essential because of the negative impacts associated with water use restrictions. For instance, respondents mentioned the impact on London’s economy; and RWE Generation explained that

their Didcot site was able to cope with short interruptions to supply but not long ones.

Challenges

In spite of this general support, there were three challenges to TW's approach to drought and risk, as summarised in Table 5.7.

Table 5.7. Challenges to TW's approach to drought and risk

Challenges	Example quotes
<p>Ensure options in the plan could achieve the target level of resilience. Some stakeholders queried whether the plan as it stands could meet its target of resilience to a 1 in 200 year drought by 2030. This was also due to uncertainty about whether the options in the preferred plan could meet the target.</p>	<p><i>"We admire the company's plans to increase resilience by 2030 sufficiently to cope with a 1 in 200-year drought event, but there is no doubt that the over reliance on leakage reductions and demand management, from a company that has and is currently missing its leakage targets by a fair margin, will be at the expense of the environment."</i> (Angling Trust)</p>
<p>Ensure estimates of the frequency of severe drought are correct. There was concern that the model for assessing drought risk might have underestimated the frequency of severe drought.</p>	<p><i>"We have in the past received evidence that three-dry-winter (or worse) droughts have occurred in London six times in the 140 years of scientific rainfall records, and urge you to closely monitor the projected future likelihood of clusters of dry winters."</i> (London Assembly Environment Committee)</p>
<p>Increase ambition. A few respondents, including Environment Agency, argued that the plan needs to go further in addressing resilience. It should do this in three ways: increase resilience earlier; address a broader range of drought scenarios; and address non-drought resilience.</p>	<p><i>"(TW) has not assessed the non-drought resilience of its existing operations to hazards such as flooding and freeze-thaw. The company has recently experienced significant freeze-thaw related water shortages which substantiates how important this assessment is."</i> (Environment Agency)</p>

5.4.4 Regional planning

Support for progress so far

Several responses highlighted the importance of regional planning for water resources. This view was expressed by the following stakeholders, among others.

- Environmental organisations (Angling Trust and associated bodies and individuals, South East Rivers Trust, and WWF)
- Local authorities (Buckinghamshire County Council, GLA/Mayor of London)
- Regulators (Ofwat and Environment Agency)
- Water companies (Affinity and Southern Water)

- Several individuals

Therefore the progress TW had made on regional planning was welcomed. Stakeholders had positive feedback about TW's involvement with WRSE, the proposal for Abingdon reservoir to provide a regional resource, and their discussions with other water companies on transfers.

"The Angling Trust welcomes the efforts of water companies in the region, through Water Resources South East (WRSE) to produce a water strategy for the south east. Their document From Source to Tap outlines the extent of the challenges."(Angling Trust)

"The provision of water from the Abingdon reservoir would help meet the need for additional water resources from neighbouring water companies, particularly Affinity Water, which is without any surface water storage infrastructure and consequently relies on abstractions from groundwater that would otherwise feed some of Greater London's most valuable chalk streams."(Individual)

Challenges

While recognising that progress had been made, several stakeholders urged TW to do more now, while reviewing the draft WRMP, and in the long term, as summarised in Table 5.8. However, some opponents of Abingdon Reservoir had a different view, as also noted in the table.

Table 5.8. Challenges to TW’s approach to regional planning

<i>Challenges</i>	<i>Example quotes</i>
<p>Reconsider additional options to supply the South East region Stakeholders, including Environment Agency and Ofwat, recommended that TW should do more to help ensure the resilience of the south east as a whole. This might require, for instance, regional transfers from the Midlands, in addition to a new reservoir.</p>	<p><i>"Thames Water is in a pivotal position to provide water to other water companies and the plan may need to change depending on the needs of others. We support the joint work of the Water Resources in the South East (WRSE) group to ensure water supplies in the South East are secure and resilient. Although it has not been selected by Thames Water, we expect the company to continue to work on the potential Severn-Thames transfers and put more work into an appraisal that would help understand whether this would provide additional resilience to Thames Water and South East England in the future."</i>(Environment Agency)</p> <p><i>"Considering the key regional role of Thames Water, we are disappointed that the draft plans in the south east appear to miss a major opportunity to secure the long term resilience of the region. While we appreciate that this is not an issue for Thames Water alone, we expect Thames Water to urgently work to seize the opportunity of regional solutions to address challenges in the south east."</i>(Ofwat)</p>
<p>Compare plans with neighbouring water companies Stakeholders highlighted the importance of ensuring consistency between water companies’ plans on the timing and volume of transfers. This might mean that Abingdon Reservoir is needed earlier than planned.</p>	
<p>Extend collaborative working to beyond the south east Bristol Water suggested that TW should</p>	

<p>engage with West Country Water Resources Group to further explore regional transfer from the Midlands.</p>	
<p>Support longer term developments in collaborative regional working Beyond WRMP19, there were calls for more regional planning. For instance, it was suggested that a statutory body should be set up to take responsibility for a regional water plan.</p>	<p><i>"There is an urgent need for water resource planning in general to be conducted at a regional level rather than relying on individual companies to produce separate plans which, of necessity, are interdependent on each other. We would particularly welcome the introduction of a statutory requirement for regional WRMPs alongside the establishment of regional planning bodies that included customer and stakeholder representation. Without this there is little prospect of realising the bold aspirations of the government's 25 year environment plan or of achieving a more sustainable, resilient and efficient water resource system."</i> (Angling Trust)</p>
<p>Reconsider building Abingdon Reservoir with regional transfers in mind There was no opposition to regional planning in general. However, there was the occasional objection to or query about TW building a large reservoir in Abingdon with the intention of selling water to other companies.</p>	<p><i>"We note there is reference to the selling-on of water from the proposed Abingdon Reservoir to neighbouring water companies. We query the proportion of water which is intended to be sold - we think this is extensive and may question whether the Abingdon reservoir is actually needed...Whilst we accept that the reservoir is part of the water infrastructure needed to provide resilience of supply for the South East of England, we do not believe that this should be met from one location such as Abingdon as the resulting storage requirement will inevitably make the reservoir much larger and impactful than otherwise needed."</i> (Earl of Plymouth Estates)</p> <p><i>"The county would like further discussion with Thames Water and possibly other members of WRSE on the potential sites that have been assessed across the South East region. As the reservoir is a 'Regional Reservoir' the county needs to fully understand the process that has been undertaken to assess other sites for their suitability for such a reservoir."</i> (Oxfordshire County Council)</p>

5.5. Allowing for risk and uncertainty

A few stakeholders (listed below) queried how uncertainty had been dealt with in the draft WRMP.

- Regulators (Environment Agency, Ofwat).
- Campaigning organisations (GARD, Angling Trust and associated bodies and individuals)
- A few other individuals.

They requested that TW make changes to their approach, as summarised in Table 5.9.

Table 5.9. Suggestions for improving approach to risk and uncertainty

<i>Suggestion</i>	<i>Example quotes</i>
Include uncertainty from all relevant sources on both supply and demand sides.	<p><i>"There has been too much reliance on stochastically generated river flow data which have been shown to be unreliable. This may have led to large over-estimation of the projected deficit and, certainly, a high level of uncertainty, which has not been recognized."</i>(GARD)</p> <p><i>"There is significant uncertainty related to the population growth, especially in London and the scale of potential demand needs of neighbouring companies."</i>(Ofwat)</p>
Ensure uncertainty is correctly assessed.	<i>"The company's statistical modelling indicates that there is a high level of uncertainty in its demand modelling. However, it is not clear that this has been adequately reflected in the company's headroom assessment which should capture this uncertainty. If the company has under-estimated this uncertainty it could impact the company's supply-demand balance."</i> (Environment Agency)
Ensure that headroom is sufficiently large to accommodate all key uncertainties.	
State the individual contribution of each component to the headroom assessment.	<i>"We would like to see greater evidence on how the risks were selected and that the draft plan is robust to accommodating all key uncertainties given their potential significance."</i> (Ofwat)

5.6. Baseline supply demand position

There were no specific responses on this issue.

5.7. Appraisal of water resource options

5.7.1 Teddington Direct River Abstraction (DRA)

Opposition

There was opposition to Teddington DRA from many and varied stakeholders, including:

- Regulators (Environment Agency, Historic England – London, Natural England, Ofwat).
- River and angling-related organisations (Angling Trust and associated organisations and individuals, Port of London Authority, River Thames Society, South East Rivers Trust, Thames Rivers Trust).
- Environmental NGOs (Groundwork South, Royal Society for the Protection of Birds, WWF).
- Local authorities (Cranleigh Parish Council, GLA/London Mayor, London Councils).
- Industry (GMB, MBNA Thames Clippers).
- Individuals.

Port of London Authority's seven page response focused solely on Teddington DRA. Stakeholders' concerns are summarised in Table 5.10. Their main concerns were the impact on river ecology and navigation. The potential environmental problems were seen as particularly concerning because they raised question marks about the feasibility of an important and early element of the plan.

"A major concern is that of the Teddington Direct River Abstraction scheme. There appear to be several unresolved environmental issues and it seems to us that the future of this key project cannot be guaranteed."
(Thames Rivers Trust)

"We are concerned that a well investigated and understood proposal, the Abingdon Reservoir, has been delayed and that there is an over-reliance on a new river abstraction at Teddington which is being given priority to provide a new water supply. It seems a risky strategy to promote a relatively little thought through proposal over one that has been considered for 40 years."(South East Rivers Trust)

Table 5.10 Concerns about Teddington DRA

Concerns	Example quotes
<p>Environmental impacts</p> <ul style="list-style-type: none"> Negatively impact on ecology due to changes in water levels, flows, temperature, composition/quality and sedimentation. High energy use/carbon output. 	<p><i>"The company's scoring of this option in its option appraisal does not reflect the environmental concerns that we and it have identified."</i> (Environment Agency)</p> <p><i>"Teddington Weir is an important Bass Nursery Area. The higher temperature and lower dissolved oxygen levels of effluent input above Teddington Weir are likely to have impacts for coarse fish and invertebrate populations during the autumn and winter months."</i> (Angling Trust)</p>
<p>Social and economic impacts</p> <ul style="list-style-type: none"> Negative impact on navigation due to changes in water levels, water flows, and sedimentation. Moderate adverse effects on heritage assets. 	<p><i>"Although some/all of the treated discharge from Mogden would be piped up to enter the river to compensate, this would only assist in maintaining flow between Teddington and where it would otherwise have entered the river at Mogden/Isleworth, leaving the shallowest reach of the river, i.e. Syon Reach potentially impassable at low tide even for the smallest vessel."</i> (River Thames Society)</p> <p><i>"Since 2015 MBNA TC has invested £15million in bespoke high speed craft that can accommodate low air draft and water draft, the latter being a minimum requirement of 0.8m of water depth. We note from the consultation that water depth could be impacted by as much as 0.2m which given our operating restrictions, could have significant impact on the viability of operating our West London Route."</i> (MBNA Thames Clippers)</p>
<p>Deliverability</p> <ul style="list-style-type: none"> Complex. Progress is uncertain because of unresolved environmental issues. 	<p><i>"We query the apparent complexity of this plan and query why it is not easier to simply treat the wastewater effluent to a higher standard and use that for drinking water supply... It would have been helpful to have greater explanation about this scheme in the draft WRMP."</i> (London Councils)</p>
<p>Resilience No increase to resilience.</p>	<p><i>"It relies on using only water that is 'already in the system' - it does not lead to any net increase in water in the Thames Basin, and so in the longer term is not a future-proof solution."</i> (Individual)</p>

It was suggested that TW should take the following steps to clarify and address the environmental concerns.

- Carry out further investigations. It was understood by some stakeholders that there were already underway.

"We understand that investigations into the environmental impacts of the Teddington scheme are ongoing, in particular the risk that it will cause deterioration in WFD status and impact fish populations in the Thames downstream. We look forward to seeing the outcome of these investigations and if necessary measures included to avoid or mitigate impacts." (Royal Society for the Protection of Birds)

"The assessments to date do not appear to have considered the cumulative impacts from the Teddington DRA with other proposed WRMP plans, Tideway tunnel and climate change. The cumulative impacts of salinity, dissolved oxygen, sedimentation, water levels and water flows have also not been assessed. These assessments, and your proposed mitigation measures, would help us to fully understand the implications of the Teddington DRA." (Port of London Authority)

- Review whether Teddington abstraction should be included in the plan. If not, then focus on less environmentally damaging supply options.

"Real ecological impacts should be fully investigated (not just in relation to WFD) and be able to be fully mitigated or the scheme should not go ahead." (South East Rivers Trust)

- Look at alternative designs or mitigation measures to reduce the negative impacts. These might include, for instance, moving the discharge point upstream of the abstraction point; only increasing abstraction at times of high flows; strictly limiting frequency of use; or not using the scheme during the winter months when the discharge might be most harmful (but this might make the scheme uneconomical).

"We do not believe that increased abstraction from the Thames at Teddington Weir other than in times of high flows should be permitted. Rivers in the south east are already suffering dramatically from low flow levels, which has become more apparent over the past 3 years, with our river Cranleigh Waters having become ephemeral and eutrophic." (Cranleigh Parish Council)

"We wish to understand how operation of the Teddington DRA will be decided and what measures will be in place to prevent the option being used more frequently than once every two years. More frequent / longer duration operation is likely to have long-term ecological consequences and will further impact river users." (Port of London Authority)

- Consider whether it is possible to go beyond mitigation and actually improve the ecology.

"Thames Water's approach should not only mitigate ecological harm and maintain habitat, but should actively increase habitat and improve ecology to support the Mayor's habitat targets. In the short term, this is vital for the proposed Teddington abstraction scheme." (GLA/London Mayor)

- London Mayor/GLA asked TW to commit to reducing emissions and energy use in all aspects of the scheme, both operational and embodied. This is needed to contribute to the Mayor's objective for London to be zero-carbon by 2050.

Environment Agency's lengthy list of recommendations relating to Teddington DRA (see Box 5.1) encompasses all of the above points, as well as several others.

Box 5.1- Environment Agency Recommendations on Teddington DRA

We recommend the company only includes this option in its preferred plan if it can demonstrate it does not cause an unacceptable impact on the environment. The company must:

- continue to work with us to ensure that its plan does not cause an unacceptable impact on the environment
- consider where alternative scheme designs could mitigate the impacts of the option
- provide an updated environmental assessment of the Teddington Direct River assessment option
- ensure that all environmental impacts have appropriate mitigation and the cost of this mitigation is included in the cost of the option
- ensure its Water Framework Directive Assessment considers all waterbodies that could be impacted by the option and reflects the planned utilisation of the option
- update its Strategic Environment Assessment with the revised assessments for the option and the findings inform the preferred plan
- consider whether the rejection of the Mogden reuse in favour of the Teddington Direct River Abstraction scheme is appropriate
- complete a cumulative assessment of the options within its preferred plan on the River Thames
- consider the likely abstraction and discharge permits that might be needed and how they would impact the scheme
- consider how the scheme will interact with the Mogden effluent in the tideway
- consider how the scheme will operate in combination with the Lower Thames Operating Agreement
- consider the implications to the operation of the Thames-Lee Tunnel during construction
- confirm how the scheme will be operated and ensure that all of the assessments use consistent utilisation assumptions
- consider whether the option has been scored correctly in its options appraisal.

Support

Although the dominant view among stakeholders was concern, there was some support for Teddington DRA or at least an understanding of the value of the scheme. This was mentioned by a handful of stakeholders (listed below).

- A local authority (GLA/London Mayor).
- Local campaign organisations (GARD, Wantage and Grove Campaign Group).
- Other stakeholders (TW's Consumer Challenge Group).
- Individuals.

Abingdon Reservoir opponents were the strongest source of support for Teddington DRA. They argued that if TW would operate Teddington DRA more efficiently than they planned, there might be no need for Abingdon reservoir. They saw Teddington DRA as preferable because they believed it would be, for

instance, less costly, less environmentally damaging, and better for drought resilience.

"This is an excellent scheme as it uses a large continuous resilient resource with limited capital investment. The scheme (is) capable of expansion to supplement the East and West London systems. Thames Water underestimate the deployable output of the Teddington DRA scheme under present available flows from Mogden, and in future when available flows will increase as demand grows...Thames Water should inform the public and environmental interests of the ability of the Teddington DRA scheme to alleviate over-abstraction in Thames Valley chalk streams, rather than saying that the Abingdon reservoir is the only solution."(GARD)

Other stakeholders gave some support to Teddington DRA but also recognised the potential problems.

- TW's Consumer Challenge Group explained that customers supported it but might have been less supportive if they had had a better understanding of the environmental concerns.

"Customers in general felt positively about this as an option - in fact, it was the most popular of the options they considered... It provided a high yield, was apparently quick, simple and cheap... Nevertheless, customers could see few downsides; the Consumer Challenge Group understand, however, that there are a number of environmental concerns which have not been fully bottomed out and recent research with customers has shown clearly that if this option were to cause environmental deterioration this option would not be supported by customers." (TW's Consumer Challenge Group)

- Likewise, GLA valued this option because it would increase resilience to drought, but they weighed this up against the environmental concerns.

"Both the Teddington abstraction scheme and the Beckton reuse option represent highly resilient water supply options, which will reinforce London's supply in the longer term. However, the Mayor acknowledges that carbon emissions and energy use would increase as a result of these schemes." (GLA/London Mayor)

5.7.2 Beckton reuse

Opposition

Concerns about the Beckton reuse scheme came mainly from the following stakeholders.

- Regulators (Natural England, Historic England – London).
- River and angling-related organisations (Angling Trust and associated organisations and individuals, River Thames Society, South East Rivers Trust).
- Environmental NGOs (Groundwork South and WWF).

- Local authorities (GLA/London Mayor and London Councils).
- Other stakeholder (Waterlevel).

Their concerns are summarised in Table 5.11. As with Teddington DRA, the main concern, mentioned by most of the organisations listed above, was the impact on river ecology. However, compared to Teddington DRA it was mentioned by fewer stakeholders and with less urgency.

It was suggested that TW should take the following steps to address stakeholders' concerns.

- Fully investigate the impact on river ecology before deciding whether to proceed.
- Commit to reducing emissions and energy use in all aspects of the scheme, both operational and embodied.
- Put in place robust monitoring and treatment processes to protect human health.

Customer opposition was seen as a possible obstacle to delivery, in spite of the public protection measures the scheme includes. TW's Consumer Challenge Group's summary of customer views seems to support this concern.

"Water reuse tends to divide customers, with some finding the concept unpalatable; there is, though a consensus that it is both complex and costly and so it is not especially favoured." (TW's Consumer Challenge Group)

Table 5.11 Concerns about Beckton reuse

Concerns	Example quotes
Environmental impacts <ul style="list-style-type: none"> Negative impact on ecology due to increased salinity. High energy use/carbon output. 	<i>"For the Beckton re-use scheme, further investigation is required to confirm whether reductions in freshwater flows to Middle Tideway WFD waterbody will cause failure of WFD objectives."</i> (Natural England)
Social and economic impacts <ul style="list-style-type: none"> Major adverse effects on heritage assets. Potential negative impact on human health. 	<i>"We agree with the conclusion in the SEA environmental report of major adverse effects."</i> (Historic England – London) <i>"The potential cumulative impact of recycling water with not all hazardous agents removed by standard treatment processes could have an impact on human health."</i> (River Thames Society)
Cost <ul style="list-style-type: none"> Expensive. 	<i>"This scheme appears complicated and expensive and to some extent dependent on advances in technology."</i> (London Councils)
Deliverability <ul style="list-style-type: none"> Customer opposition. Complex. Dependent to some extent on advances in technology. 	<i>"Such schemes have not yet been universally accepted by the public, and may be vulnerable to customer challenge."</i> (Waterlevel)

Support

Support for the Beckton reuse scheme came from the following stakeholders:

- Local authorities (Buckinghamshire County Council, GLA/London Mayor, and London Councils).
- Local campaign groups (GARD, Wantage and Grove Campaign Group).
- A landowner (Earl of Plymouth Estates).
- Individuals.

Their reasons for supporting the scheme are summarised in Table 5.12. GLA and London Councils welcomed the increased resilience to drought that the water re-use scheme would provide. However, they also expressed concerns, weighing up the increased resilience against the environmental impact, cost, and complexity of the scheme.

Other stakeholders supported the scheme because they saw it as preferable to other supply options, mainly Abingdon Reservoir. Opponents to the Abingdon Reservoir argued that if more water was supplied through water re-use and

other supply options, Abingdon Reservoir would not be needed. They argued that if TW would operate the scheme more efficiently than they planned, this could lead to a substantial improvement in its deployable output. They suggested that it had several benefits over a large reservoir, mainly smaller capital cost and less environmental damage.

"The plan proposes to limit the Beckton Re-use scheme to 285 million litres per day yet our local experts (GARD) see no reason for a limit of less than 350 million litres per day." (Wantage and Grove Campaign Group)

"There appear to be many more viable, less environmentally damaging and far more sustainable alternative approaches to such a large reservoir. These include desalination, Severn water transfer, water re-use schemes and extraction from Teddington lock area." (Individual opponent to Abingdon Reservoir)

5.7.3 Abingdon reservoir

There was both strong support and strong opposition to the proposals for Abingdon reservoir, as described below.

Opposition

There were roughly as many opponents as there were supporters. While some supporters argued that there had been a shift in views since the last WRMP, with more support now than previously, there was still strong opposition. Opponents are listed below:

- Local landowners (Hillesden Trust, Chinmaya Mission UK, Earl of Plymouth Estates Ltd).
- Environmental NGOs (CPRE).
- Local campaign groups (Cotswold Canals Trust, GARD, Wantage and Grove Campaign Group).
- Local authorities (Vale of White Horse District Council, East Hendred Parish Council, Drayton Parish Council).
- Other stakeholders (Waterlevel).
- Local residents and other individuals.

Stakeholders mentioned as many concerns as there were benefits, as summarised in Table 5.12. Concerns differed somewhat between opponents, as described below.

- GARD made three main arguments in their lengthy and detailed (over 180 page) response: future demand and deficits had been overstated; other options for reducing the deficit had been understated; and negative impacts of the reservoir had also been understated.
- Local residents felt particularly strongly about the impact on local environment and people e.g. planning blight beforehand, disruption during

construction, visual impact and habitats lost afterwards. Their responses were sometimes very strongly worded.

"As a life-long (69 years) resident of the village of East Hanney, I wish to say that the plan for a reservoir east of the village would have a dramatic and deleterious effect on the character and amenities of the village and the wider area and should in no circumstances be permitted." (Local resident)

- Cotswold Canals Trust highlighted the strong local objections to the reservoir that would probably delay delivery. This was in marked contrast to the national and local support for a water transfer via the Cotswold Canals that would probably make delivery much more straightforward.
- Historic England and Natural England also raised some concerns mainly about the visual impact on landscape and cultural heritage.

Table 5.12 - Concerns about Abingdon reservoir

Concerns	Example quotes
Environmental impacts <ul style="list-style-type: none"> • Loss of habitat 	<i>"The proposed reservoir would have a very significant impact on (list of bird species) as it would destroy a large area of existing habitat. The proposed reservoir would therefore have a significant effect on some of the most threatened bird species in England."</i> (Chinmaya Mission UK)
Social and economic impacts <ul style="list-style-type: none"> • Before - planning blight and reduced property values. • During - disruption from construction e.g. noise and dust, travel affected. • After – negative visual impact in landscape, loss of farmland, homes, businesses, and archaeological remains. 	<i>"More important than any impact on particular designated assets, the proposed reservoir would have a huge impact on the landscape. This has heritage significance."</i> (Historic England)
Cost <ul style="list-style-type: none"> • High cost 	<i>"Massive capital cost."</i> (Individual)
Deliverability <ul style="list-style-type: none"> • Strong opposition will make delivery at best slow and difficult, at worst uncertain/impossible. • No track record. 	<i>"The Reservoir development project itself has been contentious over many years, and the subject of objections from sectors of the community and from regulatory bodies. Whilst opinion appears to be changing, such projects are long in the planning, and longer in the delivery."</i> (Waterlevel)

	<i>"Thames Water have no experience of building a reservoir let alone one of this scale."</i> (Wantage and Grove Campaign Group)
<p>Resilience</p> <p>Limited improvement to drought resilience for the following reasons.</p> <ul style="list-style-type: none"> • No need for the reservoir as demand forecast has been overstated. • The reservoir will not fill much during dry winters and will lose water through evaporation in hot summers. • Flooding will increase due to building over the flood plain. 	<i>"You can only store the rain that actually falls."</i> (Drayton Parish Council)
<p>Other</p> <ul style="list-style-type: none"> • Unfair to build a single large reservoir to supply the south east region. • Wrong of TW to build the reservoir to profit from selling water. 	<i>"The real sting in the tail is the fact that they planning to sell water elsewhere in the country. Quite shocking and these proposals should be thrown out."</i> (Individual)

Underlying some of the responses from opponents of the reservoir was a strong sense of mistrust. They suspected that TW was biased towards this option and against others, and so had developed the draft WRMP in a way that inevitably included the reservoir. GARD argued that TW had underplayed the benefits of other options and underestimated the negative impacts of the reservoir.

Opponents generally argued that TW should simply remove the reservoir from their preferred plan. However, occasionally they suggested alternative approaches to dealing with their concerns.

- While many supporters urged TW to fast track the reservoir (see below), a few opponents suggested delaying the decision until it was clear whether it would be needed, depending on whether the expected deficit emerged. However, a local landowner requested a firm commitment soon either way to deal with the planning blight that his industrial estate was experiencing.

"It is proposed that the site for the reservoir is safeguarded for a further twenty years, while the other less drastic measures shown in the dWRMP are developed, population growth figures are revised and predictions of the effect of climate change on rainfall are assessed." (East Hendred Parish Council)

- It was occasionally argued that mitigation measures, e.g. slightly moving the site of the reservoir, might help.
- Vale of the White Horse District Council called for a public inquiry. When referring to the previous inquiry, opponents could not see that any

improvements had been made that would lead to a different outcome this time. In fact, they pointed out that the planned reservoir was substantially larger this time.

Opponents argued that alternative options would be preferable e.g. more leakage reduction or River Severn-Thames transfer via the Cotswold Canals.

"I strongly object to the proposal on the grounds that if TW fixed leaks then there would be no requirement." (Individual)

Support

There was a wide based of support for Abingdon Reservoir. The following stakeholders expressed their support.

- River and angling-related organisations (Amwell Magna Fishery, Colne Valley Fisheries Consultative, London Waterkeeper, River Chess Association, River Thames Society, South East Rivers Trust, Thames Rivers Trust, Thame Valley Fisheries Preservation Consultative).
- MPs (Richard Benyon MP, Geoffrey Clifton-Brown MP, John Redwood MP).
- Local authorities (Cranleigh Parish Council, GLA/London Mayor, South Oxfordshire District Council).
- Water companies (Affinity Water, Southern Water).
- Regulators (Environment Agency, Natural England). However, please note that Natural England also expressed concerns, as discussed below.
- Other stakeholders (Thames Valley Chamber of Commerce)
- Individuals.

Respondents’ focused on two main benefits: the reservoir’s role in increasing resilience to drought and its role in protecting chalk streams from over-abstraction. However, many other benefits were mentioned, summarised in Table 5.13. Natural England suggested that there are probably even more.

Table 5.13. Perceived benefits of Abingdon Reservoir

<i>Perceived benefits</i>	<i>Example quotes</i>
<p>Environmental impacts</p> <ul style="list-style-type: none"> • Protect chalk streams by reducing abstraction. • Habitat creation. • Carbon storage. • Energy generation. 	<p><i>"It is a fact that rivers cannot support wildlife if there is little or no water in them. We need reservoirs and we need big reservoirs like the one proposed for Abingdon."</i> (Charles Walker, MP for Broxbourne)</p> <p><i>"There is considerably higher natural capital and ecosystem services potential from the Abingdon Reservoir (than TW mention in the dWRMP). Such benefits could include, for instance: increased carbon storage through wetland creation; energy</i></p>

	<i>generation from embankment hydropower; water for drinking and non-drinking purposes; increasing biodiversity by habitat creation.”(Natural England)</i>
Social and economic impacts <ul style="list-style-type: none"> • Create lake for recreation. 	<i>“A new reservoir could provide opportunities for sports and leisure.” (South Oxfordshire District Council)</i>
Cost <ul style="list-style-type: none"> • Relative low cost 	<i>“I am encouraged that the proposed reservoir is among the lowest cost programmes evaluated.” (Richard Benyon MP)</i>
Resilience <ul style="list-style-type: none"> • Increase resilience to drought by providing additional water storage. • Increase resilience to flooding by storing excess winter water. • Help the region as a whole by providing transfers to neighbouring companies. 	<i>“First and foremost, the reservoir would provide the facility for Thames Water to store water during times of surplus, allowing this to be used by Thames and other companies in the region during times of water scarcity and therefore affording enormously increased resilience to both droughts and flooding.”(Angling Trust)</i> <i>“There is some strong local opposition but any decision must consider the needs of all Thames Water customers, and those in the wider South East, through transfers to neighbouring companies.”(Environment Agency)</i>

The regional strategic importance of the reservoir was noted. Affinity Water expected to make use of a transfer from the reservoir, as discussed above. Southern Water currently did not, mainly due to cost. However, both companies were would need to wait for feedback from consultations on their own draft WRMPs before confirming.

Given the perceived benefits discussed above, many supporters urged TW to build the reservoir earlier than planned. There was frustration that no action had been taken yet with some respondents saying they had been aware of plans for the reservoir for 10 years or even since the 70s.

“The proposals to delay this until the 2040s is unacceptable and is only delaying the inevitable.”(Angling Trust)

If the reservoir is only in operation in the 2040s as planned, stakeholders argued that this could lead to several problems.

- In the meantime, there would be further damage to chalk streams and there would need to be restrictions.

"We need a new large reservoir to be built now – not in 30 years' time. Without it customers and the environment will suffer." (Thame Valley Fisheries Preservation Consultative)

"Disappointing... The delayed appearance of the proposed Abingdon Reservoir will mean reduced capability in easing the pressure on over-abstracted chalk streams. It was only last November at the Annual Stakeholder Review meeting that TW CEO Stuart Robertson told the audience that it was his passionate wish to cease abstraction from such rivers as soon as possible." (Thames Rivers Trust)

- The land for the reservoir might no longer be available.
- Affinity Water might need water transfers sooner. Their draft WRMP includes a large transfer from TW some years before they currently expect the reservoir to be in operation. Ofwat and Environment Agency mentioned that TW needs to ensure that their plan aligns with plans of neighbouring water companies.

"We note the (reservoir) is planned for the early 2040s but as outlined above, we expect Thames Water to work with other companies to fully consider the regional need." (Environment Agency)

5.7.4 Regional transfers

This section summarises responses to TW's decision not to use the Cotswold Canals for regional transfers; responses to TW's proposals for transfers via the River Severn in general; and finally responses to TW's proposals for using the Oxford Canal.

Transfers via Cotswold Canals Support and perceived benefits

A very large number of stakeholders asked TW to reconsider transfers via the Cotswold Canals. Supporters fell into three main groups.

- Organisations responsible for canals in general and the Cotswold Canals in particular (Canal and River Trust, Cotswold Canals Trust, Stroud Valleys Canal Company).
- Two local authorities with the Cotswold Canals running through them (Stroud District Council and Wiltshire Council).
- Over 200 individuals, many of whom stated that they were members of the Cotswold Canals Trust or residents living close to a canal.
- Other stakeholders (e.g. GMB).

Responses about using the Cotswold Canals centred around two issues. First, they focused on a number of perceived benefits. Second, they queried why Thames Water had rejected the option.

Views about using the Cotswold Canals regional transfers were strongly positive. Numerous benefits were mentioned (summarised in Table 5.14 below) and most were mentioned repeatedly.

Table 5.14 Perceived benefits of transfers via Cotswolds Canals

<i>Perceived benefits</i>	<i>Example quote</i>
Environmental impacts <ul style="list-style-type: none"> • Create a wildlife corridor • Energy efficient to run • Little disruptive building work 	<i>"Providing biodiverse habitat and connectivity between currently isolated habitats."</i> (Individual)
Social and economic impacts <ul style="list-style-type: none"> • Positive impact on heritage/ accelerating restoration of the historic canal • Little disruptive building work • Provide leisure opportunities • Provide economic benefits through tourism 	<i>"(This) would greatly accelerate the restoration of the entire canal which is of general benefit for water management, leisure and public well-being."</i> (Individual) <i>"An unrepeatabe chance to restore one of Britain's great engineering achievements."</i> (Individual) <i>"From a tourism perspective, we recognise the advantages of restoring the canal to the national, regional and local economy."</i> (Stroud District Council)
Cost <ul style="list-style-type: none"> • Low cost to develop as not starting from scratch • Low cost to run as using canals for two functions. 	
Deliverability <ul style="list-style-type: none"> • Quick to develop as popularity would mean little opposition 	<i>"The restoration of the Cotswold Canals is a project of national importance and its restoration features</i>

<ul style="list-style-type: none"> • Quick to develop as not starting from scratch • Low risk as it has been tried and tested 	<p><i>in all of the local authority plans along its route. This means that, rather than being opposed and frustrated at every step as has happened with the Abingdon Reservoir, the project is likely to be broadly welcomed so making its delivery fairly straightforward.”</i> (Cotswold Canals Trust)</p>
<p>Resilience</p> <ul style="list-style-type: none"> • Providing water to the dry south east. 	
<p>Other</p> <ul style="list-style-type: none"> • Good PR for TW • Innovative 	<p><i>“Far more imaginative than a pipeline under the ground.”</i> (Individual)</p>

Given the numerous perceived benefits, supporters queried why using the Cotswold Canals had been rejected. Some argued that there had been a lack of transparency in decision making, particularly in the underlying cost calculation. Suspicion was expressed that Thames Water had biased their calculations toward their preferred options and that Thames Water preferred conventional options rather than the innovative Cotswold Canals option.

“Compelling evidence strongly suggests that Thames Water’s draft WMRP19 does not embrace the most cost effective, large scale water resource in its preferred set of options. A firmly based and objective critique has not proved possible at this stage because Thames Water has declined to make detailed costing evidence available on the grounds of ‘commercial confidentiality’... Not only does this option provide a financial incentive but it also carries with it many environmental and social advantages that have been underestimated or simply dismissed by Thames Water.” (Cotswolds Canals Trust)

Concerns

In contrast to the strong focus on benefits, only a little feedback was received with regard to potential problems.

- Some individual supporters went as far as stating that they saw no problems with using the Cotswold Canals. Others acknowledged there would be some problems but argued that they would be less than with other options (e.g. the Deerhurst to Culham pipeline).
- Cotswold District Council sought reassurance that the scheme would not negatively impact on landscapes and properties in the district or prevent the restoration of the canal.
- Angling Trust (and associated bodies and individuals) mentioned that transfers via open water, e.g. via the Cotswold Canals, could cause problems with movement of non-native invasive species; movement of water with high algal loadings; and water loss (see quote below).

"The Angling Trust has a number of issues with the proposals to transfer large quantities of water from the River Severn into the upper River Thames via the Cotswold Canals. We are aware that the Environment Agency has concerns that the proposed 10% net loss of water added into the upper River Severn that would be available to be abstracted at Deerhurst is far too conservative. We understand that, consequently, the new proposals are working on a 10-40% loss of water, making the proposals inherently much less efficient than initially suggested."
(Angling Trust)

Transfers via the River Severn in general

Responses about regional transfers via the River Severn in general were fairly balanced, with stakeholders giving positive views, negative views, and uncertainty.

Support

There was encouragement from the following stakeholders to continue to explore transfers via the River Severn.

- Regulators (Ofwat, Environment Agency).
- Opponents to other large scale supply options, namely a new reservoir (i.e. GARD).
- Individuals.

Stakeholders who supported this option explained that it seemed common sense to move surplus to a water-stressed area. They pointed out that this option seems feasible, e.g. United Utilities was already preparing for it and had included it in their draft plan. Importantly it could also delay or displace large supply-side options that seemed less desirable (e.g. GARD made this argument about Abingdon Reservoir).

Opposition

Concerns about transfers via the River Severn were raised by a range of different organisations (as listed below), with most responses coming from angling and river-related organisations and environmental organisations.

- Regulators (e.g. Natural Resource Wales).
- Angling and river-related organisations (e.g. Angling Trust, Colne Valley Fisheries Consultative, South East Rivers Trust, Thame Valley Fisheries Preservation Consultative).
- Environmental organisations (e.g. Royal Society for the Protection of Birds, Bucks, Beds and Oxfordshire Wildlife Trust, Groundwork South).
- Industry (e.g. RWE).
- Local authorities (e.g. London Councils).
- A water company (Bristol Water).

Several concerns were mentioned (summarised in Table 5.15), with environmental concerns mentioned most frequently. While some stakeholders

suggested that environmental concerns could be addressed through mitigation measures, others argued that they were a reason to simply reject regional transfers.

Table 5.15. Concerns about transfers via the River Severn

Concern	Example quote
<p>Environmental impacts Impacts on river ecology from:</p> <ul style="list-style-type: none"> • transfer of invasive species, • change in water quantity/flow, and • change in water quality. 	<p><i>"We would be opposed... due to the unpredictable and potentially disastrous effects this could have on the ecosystem of the rivers. Such transfers could not only adversely affect water quantity and quality in both river systems but could also cause other significant adverse effects such as introducing species from one river system to another where they are currently not present."</i> (Berkshire, Buckinghamshire, and Oxfordshire Wildlife Trust)</p>
<p>Social and economic impacts Impact of infrastructure and change in flows on:</p> <ul style="list-style-type: none"> • industry, • use of canals for transport, • use of towpaths, • local residents, and • landscape. 	<p><i>"We are in general supportive of transfers into the Upper Thames river. However... we do not support a transfer sourced from water that would otherwise have contributed positively to low flows on the Trent or the Anglian Ouse since these could adversely affect our power plant interests on the downstream Trent and Ouse in the donor regions by intensifying their low flow risks."</i> (RWE)</p>
<p>Cost</p> <ul style="list-style-type: none"> • Queries about affordability. 	
<p>Deliverability</p> <ul style="list-style-type: none"> • Queries about the feasibility of building new infrastructure. 	
<p>Resilience</p> <ul style="list-style-type: none"> • Doubts about long term feasibility if climate change causes low flows in the River Severn • Concerns about creating water shortages elsewhere in order to increase supply for TW customers. 	<p><i>"Climate modelling suggests that droughts are very likely to become increasingly coincident between the Thames and Severn catchments in coming decades, meaning that water transfers in the future may become unviable during dry periods (when they are required most)."</i> (Angling Trust)</p> <p><i>"If TW intends to include the River Severn to River Thames transfer in its revised draft plan, Bristol Water would expect Thames Water's proposed abstraction licence conditions and prescribed flow requirements at Deerhurst to</i></p>

	<i>fully protect the Bristol Water supply in a 1 in 200 year drought.</i> "(Bristol Water)
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Uncertainty

Some stakeholders were aware that discussions about transfers via the River Severn were ongoing so details about specific schemes were not yet available. As a result they said they were not yet sufficiently well informed to support or oppose them.

"We have found it difficult to get a clear picture on the scale and location of inter-company transfers. We understand that discussions are still live between companies and with the regulators and that these include major schemes such as the Severn Thames transfer. We believe that additional stakeholder and customer engagement will be necessary if there are any substantive changes between the draft and final plan with respect to the preferred supply side solutions." (Royal Society for the Protection of Birds)

"Disappointingly the Section 09 Environmental Appraisal details of the procedures and models used for the appraisal but we can find no details as to what positive or negative effects have been noted in the appraisal for the open water movement from the Severn to the Thames via the canal system."(Colne Valley Fisheries Consultative)

Transfers via Oxford Canal

Transfers via Oxford Canal elicited far fewer responses (4) than transfers via the Cotswold Canals. These responses were mainly, but not solely, from local organisations.

- Three local organisations (Banbury Ornithological Society, Oxford City Council, South Oxfordshire District Council).
- One other stakeholder (London Councils).

Responses focused on areas of concern or uncertainty (see Table 5.16).

Table 5.16 Concerns about transfers via Oxford Canal

Concern	Example quote
Environmental impacts Impacts on ecosystem from: <ul style="list-style-type: none"> • transfer of invasive species, and • change in water quality. 	<i>"We are concerned about the potential for major ecological impact from moving water via the Oxford Canal and into the River Cherwell. This has potential to have a major negative impact on the river, which has a high ecological value and where investment is currently being made to improve water quality and restore the naturalness of the river."</i> (Banbury Ornithological Society) <i>"Any development would need to consider the potential impacts on the Culham Brake SSSI, particularly in terms of water quality and the possible transfer of invasive species."</i> (South Oxfordshire District Council)
Social and economic impacts <ul style="list-style-type: none"> • Impact of infrastructure and change in flows on navigability of canal. 	<i>"Implications for users of canal are not fully described. How will the water flow? With navigable rivers a weir is required, where locks exist. Is such infrastructure required/planned along the length of the Oxford canal? How will this be done at the various locks within the Oxford city boundary?"</i> (Oxford City Council)
Deliverability <ul style="list-style-type: none"> • Queries about the feasibility of building new infrastructure. 	<i>"Culham and the surrounding area are within the Oxford Green Belt. This would therefore restrict the type of development that might be appropriate."</i> (South Oxfordshire District Council)

5.8. Appraisal of demand management options

In this section comments about TW's overall approach to demand management are discussed (5.8.1). The section then covers comments about leakage reduction (5.8.2), managing demand (5.8.3), and metering (5.8.4). Finally there is discussion of demand management options not currently included in the plan, on which only a few comments were received i.e. innovative tariffs and non-potable water (5.8.5).

5.8.1 Overall approach to demand management

Responses to TW's planned approach to demand management fell into three groups. Some stakeholders supported the approach; some felt that more ambition was needed on demand management; and some felt there was too much reliance on demand management. Even the latter group acknowledged that the twin tracks approach was needed; they simply felt that the balance needed adjusting, with more resource development needed in the early years of the plan. Examples of stakeholders expressing each view are shown in Table 5.17.

Table 5.17. Examples of stakeholders expressing different views about the balance of demand management and resource development

<i>TW's plan is over-reliant on demand management</i>	<i>TW's plan makes appropriate use of demand management</i>	<i>TW's plan should be more ambitious on demand management</i>
<ul style="list-style-type: none"> • Angling Trust and associated bodies and individuals • Cotswold Canals Trust • River Chess Association • Waterlevel • Individuals 	<ul style="list-style-type: none"> • Bedfordshire, Buckinghamshire, and Oxfordshire Wildlife Trust • Hampshire County Council • Groundwork South • London Assembly Environment Committee • Natural England • Individuals 	<ul style="list-style-type: none"> • CPRE • GLA/London Mayor • Royal Society for the Protection of Birds • Waterwise • WWF

Reasons for different views

It was recognised that demand management activities did not always go according to plan and therefore did not always produce the expected reductions in demand. For example, TW had not met its recent leakage or metering targets. As a result, some stakeholders argued that TW needed to provide a clear plan for delivery and monitoring progress. However, others felt that relying on demand management was too risky, with impacts for chalk streams if it failed. They, therefore, argued that TW need to bring forward large resource development schemes instead.

"Reducing leakages is a perennial topic and with reducing effectiveness. It also a relatively small gain... The main planning focus should be on the big supply options (>300Ml/day)." (Individual)

"The expected reduction in leakage and consumer demand that are anticipated to address the deficit in the shorter term might prove over optimistic. Given what is at stake (London running out of water), doing more and sooner might be wise." (Cotswold Canals Trust)

Stakeholders who encouraged TW to be more ambitious on demand management did so for two main reasons. First, reducing demand would be essential for dealing with the deficit. Second, it would be better for the environment, including putting less pressure on chalk streams.

"By managing existing resources more efficiently, the environmental impacts associated with water supply and wastewater management are reduced." (Natural England)

A few other issues were discussed by stakeholders on each side of the argument but they were less widely mentioned. For instance, there was some discussion about the relative cost of demand management and resource development but views differed; and there was some concern about loss of land from resource development.

"We are concerned about any loss of land and the creeping urbanisation and industrialisation of landscape. For this reason we feel major infrastructure proposals, such as the proposed Abingdon Reservoir, need to be subjected to the strictest scrutiny and should only go forward when all other, less damaging, options have been considered."(CPRE)

Stakeholders who believed there was a need to do more on demand management suggested taking various steps. They included increasing targets and aiming to reach them faster.

Higher PCC

Several stakeholders urged TW to reduce the PCC target. Ofwat suggested considering a target at least in line with the national average (i.e. 122l/h/d by 2045) or preferably in line with leading companies. Some of the environmental NGOs suggested going further and setting a stretch target. Royal Society for the Protection of Birds and Waterwise suggested 110l/p/d by 2045 while WWF suggested aiming even lower.

"We want to see a more ambitious target on PCC from TW of 100 litres by 2025 and 75 litres by 2050. Only with serious targets can TW drive forward with serious ambition, searching out innovative solutions and breaking from 'business as usual' planning."(WWF)

5.8.2 Leakage reduction

Importance of leakage reduction

Many stakeholders emphasised the importance of TW focusing on leakage reduction. They gave two main reasons.

- First, reducing leakage is important in its own right. If less water is lost through leakage, less water would need to be abstracted, reducing the pressure on rivers and possibly negating the need for certain supply options.

"Reductions in leakage should be a priority and remain a priority to reduce abstraction pressures on our rivers." (Thame Valley Fisheries Preservation Consultative)

- Second, awareness of leaks undermines public support for water efficiency and supply options.

"The (customer) research suggests Thames should not be 'allowed' to invest in other major projects until leakage is controlled." (TW's Consumer Challenge Group)

"We must stress the importance of leakage reduction and of reducing mains bursts in building Londoners' willingness to change behaviour to reduce their own usage. This goodwill is undermined if media reports seem to show water suppliers themselves allowing much greater quantities to escape." (London Assembly Environment Committee)

Support for TW's plans

Several stakeholders were pleased that TW had increased the target from 9% to a 15% reduction. Some of them (Buckinghamshire County Council, East Hendred Parish Council, London Councils) seemed satisfied with TW's leakage programme as it stood and made no suggestions about how it could be improved.

"We strongly support efforts to reduce leakage from pipes and we are pleased to see Thames Water has taken on feedback from partners and customers that a nine per cent reduction in leaks was not good enough. We welcome that the current plan has increased that reduction to fifteen per cent by 2025." (London Councils)

However, the dominant view was that TW's leakage programme needs more work. This view was expressed even by some stakeholders who welcomed the 15% target. The five main challenges from stakeholders on leakage are outlined below.

Challenge 1: The target is too high

Only Angling Trust and associated organisations and individuals objected to TW's decision to increase the leakage reduction target.

"We understand that Thames Water dramatically increased its leakage reduction targets from 9% to 15% following political pressure and a series of misinformed statements from the water regulator. We would like to ask how far beyond the sustainable economic level of leakage management this has gone, and what the company will not be investing in as a consequence of investing far more than initially planned in leakage reduction?" (Angling Trust)

Challenge 2: Increase the target

In contrast many and varied stakeholders argued that the target was too low. This was the most widely mentioned challenge to TW's leakage programme. The following comment is typical.

"The Trust's views on reducing leakage mirror that of Thames Water's customers; it should be the highest priority. Therefore, the target to reduce leakage by a minimum of 15% by 2025 is welcome, but we

believe Thames Water should be more ambitious.” (South East Rivers Trust)

Stakeholders suggested that TW should match other companies’ targets, customers’ expectations, or other independently set targets.

“We want to see Thames Water increasing its level of ambition on leakage. All other companies are planning to reduce leakage to levels much lower than Thames in both the short term and the long term.” (Royal Society for the Protection of Birds)

Challenge 3: Commit to a long term target

A few stakeholders, including Ofwat, pointed out that TW needs to commit to a clear target for after 2025. As with the 2025 target, it was suggested that this long term target should be a challenging one.

“The projected leakage reduction seems quite small and only seems to project to 2020 so we would ask the question ‘Is leakage reduction a priority beyond 2020?’” (Buckinghamshire County Council)

“NIC recommend halving leakage by 2050, a reduction to 300 Ml/d. Meeting this leakage target would save approximately 25% of the forecast London deficit. GARD supports the NIC’s target.” (GARD)

Challenge 4: Improve delivery to meet the target

Several stakeholders suggested that the target did not seem achievable, given TW’s recent problems meeting its current lower target. They highlighted the impact on the environment, particularly on chalk streams, if it was not achieved. They asked for details about how it would be achieved to provide reassurance that it is doable.

“While the commitment to meet a 15% leakage reduction by 2025 is welcome, the explanation of how this will be achieved is not set out in the plan.” (Ofwat)

Challenge 5: Focus on certain approaches to reducing leakage

Some stakeholders argued that TW should focus more on mains replacement or on supply side repairs.

- **Mains replacement** - It was argued that TW should not delay mains replacement because of the expense and disruption. These problems could be reduced (e.g. by coordinating work with other agencies who need to dig up roads) and the benefits of mains replacement would outweigh the problems.

“We note that mains replacement is considered an expensive and inconvenient option, and that a longer time-scale is envisaged – but it feels like this is putting off the inevitable, whilst missing out on substantial leakage reduction.” (WWF)

- **Supply side repairs** - It was argued that TW should put more effort into identifying and fixing supply side leaks. This was important because of the large amount of leakage on supply pipes. It was also becoming increasingly feasible because of smart meters to track leakage and new technologies for remote repairs.

"We are not convinced that sufficient work is being done to reduce supply side leakage where nearly half of all leakage occurs. The future potential of new technologies in addressing this has not been fully recognised which could easily bring water loss down by a greater value than all of the water stored in a reservoir at Abingdon." (Earl of Plymouth Estates)

5.8.3 Water efficiency

Numerous stakeholders commented on TW's planned water efficiency activities. Two stakeholders, Waterwise and University of East Anglia, provided lengthy and detailed comments.

Support for TW's plans

There were numerous positive comments about TW's planned water efficiency activities. They came from the following stakeholders.

- Regulators (Environment Agency, Ofwat)
- Environmental NGOs (CPRE, Royal Society for the Protection of Birds, Waterwise, WWF)
- Local authorities (GLA/London Mayor, Hampshire County Council, London Councils)
- Others (TW's Consumer Challenge Group, University of East Anglia)

These comments included positive feedback about the programme as a whole (see quotes below) as well as about specific activities, mainly smarter home visits (and the incentives programme) (see Table 5.18).

Table 5.18. Positive feedback about the water efficiency programme

<i>General feedback</i>	<i>Feedback about specific activities</i>
<p>"CPRE welcomes the efforts to reduce personal consumption." (CPRE)</p> <p>"We are pleased Thames Water is setting a relatively challenging water efficiency programme and reducing per capita consumption to 125 litres per head per day by 2045." (Environment Agency)</p>	<p>"The Mayor supports the inclusion of new water efficiency options in the Plan that were not included in WRMP14, including addressing wastage ('leaky loos'), working with housing associations, area-based promotional campaigns and an incentive scheme." (GLA)</p> <p>"The Smarter Home Visits carried out by Thames Water are based upon industry best practice and are achieving measurable savings alongside smart metering." (WWF)</p> <p>"New approaches, such as an incentive based reward scheme to encourage changes in water use, are worthwhile initiatives." (Hampshire County Council)</p>

However, most respondents with positive comments about the water efficiency programme also mentioned challenges. Several additional stakeholders only mentioned challenges (Oxford City Council, River Thames Society, South East Rivers Trust, Wantage and Grove Campaign Group). Their two main challenges are discussed below.

Challenge 1: Expand the programme

Several stakeholders encouraged TW to expand their planned water efficiency programme, as summarised in Table 5.19.

Table 5.19 Suggestions for expanding the water efficiency programme

<i>Suggestion</i>	<i>Example quotes</i>
Extend the scale of the programme by carrying out more Smarter Home Visits.	"TW's intention is to visit 300,000 homes and businesses to promote water efficiency. This is a very small proportion of the customer base and more should be done." (Oxford County Council)
<p>Include additional activities such as the following.</p> <ul style="list-style-type: none"> Promote more water-efficient new builds. Working with non-households in ways 	"We want Thames Water to commit in your final plan to piloting the use of community incentives during dry weather periods to reduce demand... We also want to see the company advocating for all new development to be at the leading edge on water efficiency... We want to see Thames Water highlighting to OFWAT the issues

<p>besides Smarter Business Visits.</p> <ul style="list-style-type: none"> • Trial community incentives. 	<p><i>that it is having in engaging business customers on water efficiency via the new water retail companies. Given the water resources challenges highlighted in the plan the current situation is not acceptable.”</i> (Royal Society for the Protection of Birds)</p>
<p>Be more innovative in general.</p>	<p><i>“Water efficiency is an area where there remains scope for further technological innovation and learning from international experience.”</i> (Hampshire County Council)</p>
<p>Include more partnership working (e.g. with government, industry, and the third sector). Several respondents were keen to work with TW on water efficiency.</p>	<p><i>“Thames Water promise to continue working with local authorities, housing associations, schools and businesses to promote the efficient use of water. Missing from this is working in partnership with the Third Sector and in particular environmental charities such as rivers trusts throughout the Thames Water area.”</i> (South East Rivers Trust)</p>

It was recognised that non-household customers were no longer TW’s direct customers. However, it was seen as crucial for TW to assist somehow in reducing their consumption. Waterwise and TW’s Consumer Challenge Group asked for more details of how TW might do this, e.g. examples of what kind of partnership working TW might employ with retailers. Royal Society for the Protection of Birds and GLA saw the need to involve Ofwat to address the problem that had arisen since the retail separation.

Challenge 2: Improve delivery of the programme

Several suggestions were made about how TW’s planned activities could be improved, to boost uptake, increase impact, or improve efficiency. For instance, Smarter Home Visits could be promoted through the third sector and local authorities to help boost uptake; as well as being combined with visits from other utilities or other retrofit programmes to reduce disruption and increase impact. Incentive-based schemes could be linked to products, not just behaviours.

5.8.4 Metering

Support for TW’s plans

Stakeholders recognised the two benefits of metering and saw the meter roll-out as a core part of both TW’s leakage reduction plan and their water efficiency plan. Therefore they supported TW’s emphasis on metering.

“Water meters are an important part of the demand management mix, not only assisting with leak detection and providing a corner stone to water efficiency work, but with smarter technology also offering the potential for long-term, targeted engagement with customers.” (WWF)

However, they mentioned two main challenges, as discussed below.

Challenge 1: Increase the target

There were calls from the following stakeholders for TW to increase their ambitions on metering.

- Environmental NGOs (Groundwork South, Royal Society for the Protection of Birds, Waterwise, WWF).
- Local authorities (GLA/Mayor of London, Oxford City Council, South Oxfordshire District Council).
- Organisations opposed to Abingdon (GARD, Wantage and Grove Campaign Group).

They urged TW to aim for faster rollout and higher targets, particularly in London. Again it was suggested that TW should at least match other companies in the South East; and again several environmental NGOs suggested more challenging targets. For instance, Waterwise referred to their Water Efficiency Strategy for the UK that recommends fitting water meters in the majority of homes by 2030.

"Progress has been made in meter installation but this process needs to be implemented more quickly."(Groundwork South)

"The plan states that in the next five years, by 2025, Thames Water will install a further 400,000 smart meters in customers' homes saving 49 million litres of water per day. How much more could be saved after that from the remainder of the 15 million customers? A very conservative estimate would be at least an additional 200 million litres per day from a further 10% of customers."(Wantage and Grove Campaign Group)

"We want to see a scaling-up of metering by Thames Water, with a 100% target (where technically feasible) at an accelerated pace. At 84% by 2045, Thames Water's leakage target is low compared to other companies in the south east."(WWF)

Challenge 2: Improve delivery to meet the target

A few stakeholders (Ofwat, TW's Consumer Challenge Group, GLA) were concerned that the metering target might be difficult to achieve, given TW's problems meeting its current target. Therefore they asked TW to do the following.

- Make improvements to their delivery. This might involve, for instance, improved communication about meters or installing them at the same time as smart energy meters.

"It appears that customers do not necessarily understand the benefits of metering and therefore it is hard to get them to keep appointments to have meters fitted. This would suggest that better education is key to getting meters out into customers' homes."(TW's Consumer Challenge Group)

- Provide details about how the target would be achieved. Environment Agency also reminded TW that providing details of their implementation strategy (and other information about their metering strategy, e.g. costs) in order to be legally compliant with WRMP directions.

"The metering strategy, which includes the rollout of smart meters, will represent a significant increase from current levels of activity (increasing from 46% to 61% meter penetration between 2020 and 2025). Given the challenge faced in the existing period of installing meters further detail should be provided on how Thames Water plan to deliver this and monitor implementation."(Ofwat)

Misunderstandings

There seemed to be a few misunderstandings of TW's metering plans. Most notably some stakeholders suggested that a compulsory metering programme was needed. They seemed not to understand that TW's compulsory metering programme is already underway (alongside optant metering) and that TW plans to continue it.

"TW target is to install 400,000 new meters in homes over period to 2025. This represents a very small percentage of the domestic customer base in the region and TW should be aiming for significantly more installs, if not compulsory meter installation (with appropriate support for vulnerable households that might have high water needs due to health or high density occupation issues)."(Oxford City Council)

Consumer-related issues

It was emphasised that TW should bear in mind the impact of meters on consumers.

- The importance of protecting vulnerable customers during the meter roll-out was mentioned repeatedly.
- Smart meters were welcomed because of the additional information customers could receive. However, privacy concerns were also mentioned.

"(There should be) greater ability for customers to refuse to share certain data with Thames Water (for example about times of usage) where customers want to retain their privacy."(London Councils)

5.8.5 Other approaches not included in the preferred plan

Innovative tariffs

There were only three comments about TW's plan regarding innovative tariffs. University of East Anglia agreed with the plan only to consider introducing them in the 2030s, when 65% meter penetration is reached. However, WWF and GLA/London Mayor disagreed, arguing that they can help to reduce consumption and there are ways around TW's concerns about them.

"While increasing block tariffs are a potential pricing solution that may balance water conservation aims with the affordability of essential water consumption, the empirical evidence on their effectiveness is mixed due to challenges in their design and operation. In particular, not only is metering fundamental to the charging of such a tariff, only once a water company can use meter data to obtain a deep understanding of how different households respond to price changes can innovative tariffs be designed to have predictable effects." (University of East Anglia)

"We note that Thames Water has chosen not to introduce rising block tariffs/ variable tariffs because of the risk of unfairly penalising large households and impacting adversely on water affordability for the poorest. We would like to understand this further, as we think there are ways around these issues – for example, high marginal charges for high discretionary use in dry times and environmentally-sensitive areas; using reward tariffs to encourage conservation where and when it matters most, with protection for vulnerable customers." (WWF)

Non-potable water

There were several comments about the use of non-potable water, almost all in favour of TW making more use of it in their plan. Support came from the organisations listed below.

- A regulator (Natural England).
- Local authorities (Buckinghamshire County Council, GLA/Mayor of London, London Assembly Environment Committee).
- Environmental NGOs (Berks, Bucks & Oxon Wildlife Trust, Waterwise).
- Others (Waterlevel, Earl of Plymouth Estates).

The following quote is typical:

"Entirely rejecting options for non-potable water is a missed opportunity, given the potential the water reuse presents in helping secure a resilient water supply, and the Mayor expects that reuse should be part of the preferred strategy, not just a backup. Not including any re-use options in the Preferred Plan suggests that Thames Water are unwilling to innovate in this area. The Mayor supports increased re-use through Integrated Water Management Strategies (IWMS) and would recommend that Thames Water support third party organisations to manage these systems if they are unwilling to do so themselves." (GLA/Mayor of London)

As with other demand management options, it was suggested that promoting the use of non-potable water was the responsibility of Government or at least that TW should work in partnership with government to innovate and research on the issue.

"With climate change on the way, and increasing concern about water shortages worldwide, it seems probable that over the next 20 years, Governments may seek changes in building regulations, or legislate in other ways to aim at reducing overall levels of consumption. More rainwater capture; the use of 'grey' water for flushing loos etc. are the type of expedients that come to mind." (Drayton Parish Council)

5.9. Environmental appraisal

This section covers stakeholders’ feedback about the environmental appraisal. It first outlines stakeholders’ views on statutory requirements that seem not to have been addressed (5.9.1). It then outlines feedback about the SEA (5.9.2), including comments about natural capital assessments (5.9.3) and impact on archaeology, cultural heritage, landscape, and visual amenity (5.9.4). Feedback about the WFD and HRA assessments is also reported (5.9.5 and 5.9.6 respectively).

Many stakeholders (listed below) commented on TW’s approach to environmental appraisal.

- Regulators (Environment Agency, Historic England, Historic England – London, Natural England, Natural Resources Wales).
- Local authorities (Buckinghamshire County Council, Cotswold District Council, GLA/Mayor of London, Oxford City Council, Vale of White Horse District Council).
- Environmental NGOs (BBOWT, Groundwork South, WWF).
- Other stakeholders with strong views about specific options (Chinmaya Mission UK, Cotswold Canals Trust, GARD, Thame Valley Fisheries Preservation Consultative).

The responses from Natural England and the two responses from Historic England were detailed and lengthy, and they focused mainly on TW’s environmental appraisal. Other stakeholders commented more briefly on this issue, alongside other comments on the draft WRMP.

5.9.1 Policy and Statutory framework

Respondents mentioned policy and statutory requirements that TW seemed not to have addressed in its environmental appraisal. They are summarised in Table 5.20. Environment Agency also reminded TW that greenhouse gas emissions arising from each measure must be included in the plan in order to be legally compliant with guidance.

Table 5.20. Additional requirements the WRMP should address

<i>Requirements</i>	<i>Example quotes</i>
Ensuring a net gain for	<i>"The plan has not considered how it will achieve a net</i>

biodiversity.	<i>gain for biodiversity which BCC understands is a requirement as a developing authority.” (Buckinghamshire County Council)</i>
Addressing carbon reduction targets.	<i>“For some of the new approaches mentioned in the Plan - such as desalination of sea water - the energy/carbon impact will increase drastically on that from current practice. It is not clear from the Draft Plan what the impact will be on legally binding national carbon reduction targets under the Climate Change Act 2008, how this is being addressed.” (Oxford City Council)</i>
Meeting targets in the London Plan.	<i>“TW’s approach should not only mitigate ecological harm and maintain habitat, but should actively increase habitat and improve ecology to support the Mayor’s habitat targets... The Mayor acknowledges that carbon emissions and energy use would increase as a result of (Teddington DRA and Beckton reuse) and have the potential to conflict with the Mayor’s objective for London to be a zero-carbon city by 2050 unless TW makes a commitment to reduce emissions and energy use in all aspects of the news schemes.” (GLA/London Mayor)</i>
Addressing Welsh legislation (only relevant to the Severn-Thames transfer).	<i>“In the SEA there is no mention of the Wellbeing of Future Generations Act or Environment (Wales) Act which are key pieces of Welsh legislation which Thames water will have to demonstrate have been considered.” (Natural Resources Wales)</i>

5.9.2 Strategic Environmental Assessment (SEA)

Natural England had broadly positive feedback about the SEA overall and specifically about the inclusion of a separate Site of Special Scientific Interest (SSSI) assessment, and the commitment to identify and remove invasive species before construction of Abingdon Reservoir.

“Natural England is happy with the overall approach to assessment of options in the SEA, which includes an assessment of in-combination and cumulative effects. The findings of the SEA have informed the selection of preferred options in the plan. However, some areas of the SEA require further work or clarification.” (Natural England)

However, several stakeholders (including Environment Agency, Natural England and Natural Resources Wales) highlighted problems with how the SEA was carried out or reported. The main problems they highlighted are summarised in Table 5.21.

Table 5.21. Problems with the SEA

<i>Problem</i>	<i>Example quotes</i>
Incomplete, unclear, and factually inaccurate information.	<p><i>"Appendix H of the SEA is supposed to deal with potential effects on any designated Site of Special Scientific Interest (SSSI), but this has not been populated, so we are not able to comment on this Appendix at this stage."</i>(NRW)</p> <p><i>"We have found the SEA assessments difficult to follow. We would expect each option to be assessed fully and presented in one place."</i>(Natural England)</p>
Inconsistencies and gaps in how the SEA was carried out.	<p><i>"We have identified inconsistencies in the way that the company has considered individual elements of an option compared to how it has considered the option as a whole."</i>(Environment Agency)</p> <p><i>"The Severn Trent Water draft WRMP, Dwr Cymru draft WRMP and United Utilities' draft WRMP are all currently out for consultation and should be considered in the cumulative assessment of impacts to the River Severn."</i>(NRW)</p> <p><i>"Natural England has not located an assessment of Priority Habitats and Priority Species in the SEA."</i>(Natural England)</p>
Failure to ensure that the environment is fully protected.	<i>"An updated Strategic Environmental Assessment should be published that clearly links new schemes in water resources management plan with detailed mitigation and monitoring plans."</i> (Environment Agency)

Stakeholders with an interest in Abingdon Reservoir and regional transfers via the Cotswold Canals were critical of the SEA for these options, as illustrated by the quotes in Box 5.2. They had two main criticisms.

- First, it was suggested that the SEAs were biased. Supporters of regional transfer via the Cotswolds Canals argued that the benefits had been understated and the adverse effects overstated, while opponents to Abingdon reservoir argued that the adverse effects had been understated and the benefits overstated.
- Second, it was suggested that the Abingdon reservoir SEA was at too high a level. It was suggested this was a serious concern as the inspector had rejected the reservoir at the 2010 public inquiry because of insufficient detail in the SEA.

Box 5.2 Criticism of SEAs for specific supply options

Regional transfer via the Cotswold Canals

"The CCSTT scheme offers far greater collateral benefits than any of the other options able to deliver 250 - 300 Ml/d of water. In addition to the obvious recreational benefits, the canal provides an environmental corridor which includes biodiversity connectivity (the ability of wildlife to travel between pockets of otherwise isolated habitat). There are also economic and well-being benefits as well as rescuing many structures of heritage importance including the canal itself. At CCT's request, TW did commission Cascade to carry out a Strategic Environmental Assessment but only on the partial restoration of the canal; not full restoration. This did confirm material beneficial effects compared to the pipeline alternative although several categories seem understated and some of the adverse effects seem overstated... For example, in row 2.2 of the chart above, it is difficult to understand why reopening a canal, much of which is currently dry with substantial lengths inaccessible to the public, has a major adverse on the 'water environment for other users including recreation, tourism and navigation, as well as terrestrial recreational resources' and only a moderate benefit. Even stranger is that the pipeline can offer any benefit at all." (Cotswold Canals Trust)

Abingdon Reservoir

"TW should re-assess the division and weighting of assessment sections in the SEA for the reservoir... GARD's reassessment places the reservoir as the 84th worst option out of 85 options under consideration for adverse effects and only better than 2 of the other 85 options in terms of benefits... Treatment of similar issues between different options is inconsistent. This undermines the credibility of the draft WRMP and we expect relevant sections of the SEA to be reworked using independent input. Due to the substantial changes already made to the draft WRMP underlying assumptions, we call for a revised environmental report to be issued for consultation." (GARD)

5.9.3 Natural Capital Accounting (NCA)

TW's interest in using natural capital assessments was welcomed. However, several stakeholders strongly encouraged TW to make more use of this approach, as illustrated in the quotes below. It is also worth noting that one stakeholder thought NCA had not been mentioned in the draft WRMP at all.

"We are pleased that Thames Water are piloting the use of natural capital in assessments of supply side options, and that they are committed to continue exploring this area in partnership with the wider water sector, regulators and stakeholders. We would like to see commitment from Thames Water to continue working on and exploring the natural capital approach, with determination to apply this to their work as soon as possible." (WWF)

"The discussion of benefits (from Abingdon Reservoir), which have been listed as 'moderate beneficial', does not extend beyond the 'creation of

recreational and tourism services. Natural England considers that there is significantly higher natural capital and ecosystem services potential from the Abingdon Reservoir, and we would expect Thames Water to have taken full consideration of these. Such benefits could include, for example local flood alleviation potential; increased carbon storage through wetland creation (to offset some of the considerable embedded carbon in building reservoirs); energy generation from embankment hydropower; water for drinking and non-drinking purposes; increasing biodiversity by habitat creation.”(Natural England)

5.9.4 Impact on archaeology, cultural heritage, landscape, and visual amenity

There were two responses from Historic England, one focusing on options in London and the other discussing all other options. They commented on the likely extent of impact from each option, compared their assessment with TW’s assessment, and suggested steps that TW should take to avoid or mitigate the impact.

While Historic England’s assessments were similar to TW’s for some schemes (e.g. Beckton re-use), they differed for other schemes. Most importantly, Historic England suggested that the impacts of Abingdon Reservoir and Teddington DRA had been under-estimated.

For some schemes, they requested more information. For instance, for Abingdon Reservoir they asked for further information about relevant investigations TW had already carried out, such as archaeological assessments.

5.9.5 Habitats Regulations Assessment (HRA)

Only Natural England and Natural Resources Wales commented on the HRA assessment. They drew attention to three perceived problems with it, summarised in Table 5.22.

Their main concern was insufficient information. They, therefore, asked for more information on the technical details (including mitigation measures) and likely impacts. Natural England provided a list of numerous issues on which additional information is needed. They noted that there might be more relevant information in additional documents (e.g. the WFD assessment and the Conceptual Design Reports) but asked that it all be included in a single formal HRA screening document.

Table 5.22. Problems with the HRA

<i>Perceived problem</i>	<i>Example quotes</i>
Insufficient information	<i>"We believe it is premature to conclude no likely significant effects from these options, as currently insufficient work has been undertaken to demonstrate the impact."</i> (Natural Resources Wales)
Factual inaccuracies	<i>"The current HRA contains numerous factual inaccuracies, such as watercourses assigned to the wrong catchment, and should be reviewed to ensure these are corrected."</i> (Natural Resources Wales)
Possible legal challenge to the reliance on mitigation measures	<i>"Thames Water has concluded that there will not be any likely significant effects (LSE) on any European protected sites, citing mitigation measures to offset any potential impacts from both construction and operational option/option element phases. The use of mitigation to remove a likely significant effect and avoid undertaking an appropriate assessment has been the subject to a recent case law. Natural England recommends that the HRA is reviewed in light of this case and that Thames Water takes legal advice on this."</i> (Natural England)

5.9.6 Water Framework Directive (WFD) assessment

Several stakeholders expressed concerns that options in the plan, and other options still under consideration, could cause WFD deterioration. For instance, Natural Resources Wales mentioned concerns about risks of deterioration from the Severn Thames transfer; Natural England from Teddington DRA and Beckton reuse scheme; and Environment Agency from several other schemes, including Ashton Keyes borehole and the transfer to South East Water.

They argued that TW needs to do more to prevent deterioration as well as providing more evidence about what they are doing. They also requested that TW consult further if the Severn Thames transfer is to be included in the revised plan. This would allow stakeholders with concerns to help ensure that WFD deterioration is avoided.

5.10. Programme appraisal and scenario testing

Section 5.10 first reports on consultee comments on issues to do with understanding the planning problem: the planning period extension (5.10.1) and regional context (5.10.2). It then outlines comments on issues to do with identifying and assessing demand/supply programmes: metrics and factors to consider (5.10.3), the preferred balance of demand management and resource development (5.10.4), adaptability (5.10.5), and the expert panel (5.10.6). Finally it covers general comments to do with transparency in the programme appraisal (5.10.7).

5.10.1 Planning period extension

Stakeholders generally welcomed TW's decision to use an 80 year planning period. Even GARD, who were critical of most aspects of the programme appraisal, welcomed the long planning period.

"It is important to ensure that a consistent, reliable water supply is maintained both now and in the future. Taking a longer term view in the WRMP19 will help to achieve this, particularly as many of the proposed new water supply options have significant lead-in times for planning, design and delivery." (South Oxfordshire District Council)

Ofwat queried the impact of the planning period on the choice of options in the programme.

"The chosen planning period of 80 years is a good example of long term planning. However, the sensitivity of this decision is not fully reported and further clarity here would help show how the planning period impacts investment decisions and choices of programmes." (Ofwat)

5.10.2 Regional context

Stakeholders were similarly supportive of TW's approach to the regional context. They generally agreed that TW should take the needs of neighbouring water companies into account in their programme appraisal. They argued that a regional approach was critical given the challenges that the South East faces.

"Their plan makes it clear that we are facing a significant water deficit and an effective regional strategy has to be developed by all of South East England's water companies." (London Waterkeeper)

5.10.3 Metrics and factors to consider

There was also positive feedback about TW's decision to use 'best value' rather than 'least cost', and to consider a range of factors in their programme appraisal. Again, even GARD welcomed this aspect of the programme appraisal.

"Given the pressures on the environment to find and produce water for public consumption, Thames Water is quite correct to have avoided going down the 'least cost' route." (Colne Valley Fisheries Consultative)

"We support the factors Thames Water has used to determine its optimum programme for water resources futures: cost, customer preferences, impact on the environment, deliverability, resilience, intergenerational fairness, and adaptability." (London Councils)

However, stakeholders had some queries and criticisms about how the various metrics had been used. Some examples are given below.

- Both Environment Agency and Ofwat highlighted that the relative significance of metrics used to compare portfolios was not clear.

- Several stakeholders asked to see the costs that TW used in their appraisal.
- In some cases it seemed like decisions had been based on least cost, not best value. E.g. London Assembly Environment Committee asked why the 'most sustainable' programme closely resembled the 'least cost' one, rather than the one with 'least environmental effect.'
- Conversely Ofwat asked for fuller justification of cases where the preferred option was more expensive than other feasible options.

5.10.4 Adaptability/'what if' analysis

It was suggested that a more detailed and transparent adaptability analysis was needed. There was some disagreement about how the results from this analysis should influence the choice of options in the plan.

Opponents of Abingdon Reservoir argued that demand had been overestimated, and, therefore, so had the deficit. If this was the case, Abingdon might not be needed. A more phased approach to development of supply options was called for.

"We do not believe that sufficient account has been taken of new technologies and technological advances in terms of water treatment technology, energy generation, and water-saving appliances, which will undoubtedly have a big impact on future water demand. In this respect the calculated deficit is over-stated which we feel draws into question the need for a large reservoir at Abingdon." (Earl of Plymouth Estates)

"With this degree of uncertainty in the deficit, avoidance of white elephants should be a high priority in the future development programme. There should be much more emphasis on phasing of options to give modest increments of supply growth, and adaptability of the future development programme." (GARD)

Ofwat's general feedback on the plan seemed to tally with these views. They advised TW that given the high levels of uncertainty, it would make sense to choose lower yield options first and more flexible solutions (e.g. modular delivery). However, other stakeholders worried that further delays on the development of Abingdon Reservoir would mean that it would be ready too late.

"There is no way that the building of this reservoir should be delayed until 2044. Building should begin as soon as possible as it will take years to fill when it is finally built." (Thame Valley Fisheries Preservation Consultative)

5.10.5 Expert panel

There was some positive feedback about having an independent expert panel involved in the process. However, there were also a few queries about their role and requests for greater clarity. For instance, Ofwat asked for details of the

panel's assessment and findings, and how they had influenced the preferred programmes.

5.10.6 Transparency

General feedback

Several stakeholders, including Environment Agency and Ofwat, emphasised the need for TW to improve the transparency of its programme appraisal and scenario testing. For instance, as discussed above, they asked for more clarity about the use of metrics, adaptability analysis and the role of the expert panel.

Environment Agency, Ofwat, and other stakeholders also asked for an explanation about changes between the previous plan and the draft plan.

"There have also been a number of substantial changes in the costs of options between the company's previous plan and the draft plan. While it is understandable that the company has updated its cost estimates, it is important to explain why the costs have changed to be transparent and auditable as cost is a key factor in the selection of options. For example, the Upper Thames Reservoir has decreased in cost, whereas other schemes have gone up in cost."(Environment Agency)

Feedback relating to specific options

Because the process lacked transparency, stakeholders suggested that the programme appraisal had been biased or at least it was not possible to check that it had been carried out fairly. As discussed in section 5.7, these arguments were made by stakeholders who supported transfers via the Cotswold Canals and opposed Abingdon Reservoir.

"The fundamental data used in the appraisal are largely non-transparent and GARD has no confidence in their accuracy or that they have been produced without bias."(GARD)

"Taken together, these changes (growth forecasts and increased leakage targets) announced on 21st March would account for something like 75% of the projected water supply that would come from the reservoir. If such a huge reduction in the need for the reservoir can be put forward in such a hasty fashion, the need for the entire reservoir cannot possibly be said to have been proved."(East Hendred Parish Council)

5.11. Preferred programme

Stakeholders made some comments in their responses about the preferred programme. However, they were usually made alongside comments relevant to other sections of the draft WRMP so they are discussed elsewhere in the report.

6. Open access survey responses

This section summarises the feedback from those who responded to the consultation questions through the online Citizen Space survey or by completing a hard copy feedback form. It should be noted that, since this was open access, any individual or organisation could submit their views and those who have an interest in (and who have the capacity to respond) are more likely to participate in a consultation than those who do not. In total, 101 such responses were received. Of these, the majority (69) were household customers and around one quarter (26) gave their postcode as OX13 and 55 were from the wider Oxfordshire / Berkshire area. This meant that many of the responses focussed on the issue of the option for the construction of a reservoir near Abingdon. The fact that over half of these open access survey responses come from domestic customers in this area should be borne in mind when reading this section, since the views expressed differ in many respects to the broader customer research responses outlined in Section 7.

A summary of responses is provided for each of the consultation questions in turn.

6.1. Severe drought (Q1)

Respondents were asked to comment on Thames Water's plans to maintain all customers' water supply with no need for it to be rationed during a severe drought by 2030. They were given options of delaying the work by five years or speeding it up by three years, which is the earliest that it can be delivered.

Almost one fifth felt that they had insufficient information (namely costs and risk/benefits) to comment. Some queried the assumptions around population and housing growth that had been made. One stakeholder felt the wording in the plan around the term 'rationing' and 'restrictions' was misleading; believing that they had been conflated:

"Thames Water is proposing to relax the existing levels of service even for a drought more severe than the one currently in operation. That is to say, the demand-reducing benefit of imposing a Level 4 set of restrictions ('rationing') if and when a drought of severity 1:125 happens along will be replaced by no demand-reducing restrictions (i.e. demand reduction at proposed new Level 4 equals zero) even for a drought of severity 1:200. The benefit for some customers will be less domestic hardship under extreme drought conditions, but higher bills to pay for the additional water resources options. The dis-benefit to Thames Water will be no final backstop even under the most extreme drought conditions climate change can muster over the next 80 years. Isn't this a rather risky strategy? Regarding the question of how quickly the proposed levels of service can be achieved, we regard this as a somewhat spurious question to be posing at this early consultation stage. Given the points made above, surely Thames Water should be seeking views

from customers and stakeholders at large on the wisdom or otherwise of relaxing current levels of service and to spell out its potential risks.” (Pang Valley Flood Forum, RG8)

Around two fifths of respondents did not choose an option, instead referring to the need to tackle leakage or reduce demand in the first instance.

“It’s not clear how your proposed plan above links to the challenges you have with leakage and aging pipes. You state “This shortfall will start in the next five years and is forecast to grow to around 360 million litres of water per day by 2045”. However, you are losing over 500 million a day due to leaks. If bills went up and more investment was put in place to find and fix the leaks (including replacing again pipes) what impact does this have on the above plan? Potentially focus should be on leaks rather than some of the other plans as you end up with a win win. If you reduce the amount of leaks you reduce your operating costs allowing more money to be invested in the other areas like sustainability, lead pipes, sewer flooding etc.” (Employee/household customer, SN5)

Others linked the question to their views on the water supply options (particularly those opposed to the reservoir):

“To build a reservoir to cater for all eventualities and very severe droughts seems over-acting. Most people would accept that during severe droughts some water rationing is necessary. Fix your leakage first.” (Household customer, OX13)

Of those, who chose a timeframe (27 of the 101), most expressed a preference for the work to be completed by 2027 (18 of the 27), citing economic reasons, customer expectations and environmental reasons.

“There’s been underinvestment for years to maintain shareholders profits. Providing drinking is a basic function of the company, I can’t even understand why this question is being asked, of course the work needs to be speeded up. I can’t believe you can’t guarantee drinking water now, I am totally shocked it will take this long. Do not pay any dividends until you can guarantee safe water supply and drinking water for all!” (Household customer, HP22)

“The message from London business is a simple one - let’s get on with it. A severe drought would be extremely damaging to London’s economy, so we support speeding up plans to build greater resilience sooner.” (London First)

“The environmental pressure on ground and surface waters to meet potable supplies should not be extended more than is necessary. Investment in infrastructure, water storage in reservoirs and tackling leakage are paramount; the earliest target date should be prioritised. TW could be seen to be leading the way in prioritising the environment while maintaining its

customers' supplies and in leading adjacent water companies who are currently simply too reliant on ground and surface water supplies when it is clear that climate change is creating greater unpredictability in weather patterns and times when stress on rivers and groundwater is environmentally unacceptable."(Wild Trout Trust)

A small number of respondents asked for a slower timescale because they felt that the work may be sub-standard if rushed and that it may result in higher costs for customers.

"I think the priority to maintain existing water supply should be low, and efforts would be better spent using education and pricing strategies, along with metering, to reduce the level of consumption per household. Therefore, I would go for the cheapest option here, which I assume is delaying work until complete by 2035."(Household customer, NW5)

London Wildlife Trust asked for sufficient time to consider the environmental impact and called for Thames Water to further consider the impact of abstraction during drought events on water bodies, with the objective of going beyond the 'no deterioration' criteria, especially in case of vulnerable and much appreciated chalk streams.

6.2. Summary of customers' views (Q2)

Almost a fifth of comments (18 of 101) were generally positive about the representation of customers' views in the plan. They highlighted Thames Water's efforts to engage with a range of customers and stakeholders, the clarity of the summary and the fact that the views stated accorded with their own. London Wildlife Trust mentioned 'Lost Effra', a London Wildlife Trust project part-funded by Thames Water as a good example.

"We welcome significant efforts that Thames Water put into engaging customers and other interest groups. We especially applaud efforts to engage younger generations through social media as this audience will be an important one to make a step change in a way that water resources are valued and used."(London Wildlife Trust)

Some respondents took the opportunity to reiterate their views on leakage:

"I understand drought restrictions but I do not accept leaks due to underinvestment while you pay high dividends to shareholders. The balance has not been acceptable while water is a precious commodity and you are asking customers to preserve it while so much is leaked. It seems a cognitive dissonance on your part. I would like to know that any changes or restrictions you are asking customers to make will be met by increased work to reduce leaks,, and reduced dividends with the funds channelled to investment."(Household customer HP22)

The London Borough of Newham queried whether hard to reach customers had been engaged and cautioned that customer views need to be balanced by other factors:

"Customer 'wants' are important. However, they should be balanced against the resources available and it is TW's responsibility to help customers change habits and use less water. Influencing the construction industry to ensure that water is used efficiently should also be a priority." (London Borough of Newham)

A small number of respondents queried the relatively high proportion of customers who indicated that they would not want frequent restrictions on water use (as per the responses summarised in Section 6.1).

Opponents of the reservoir were also critical of the fact that they were not asked directly if they supported the reservoir option. They were also concerned about the lack of notice relating to the public meeting in Steventon and how it was conducted.

"Information given is vague & more importantly there is no reference to what customers DO NOT want. Nobody has asked the question to which I can answer 'No, I don't want a bunded reservoir to be built in our area.' The environmental impact of each option is not covered fully, & surely TW has a role to improve & protect the current environment as well. I can only guess that the numbers you provide of 'consultees' include the numbers passing through the doors at meetings. I've attended these meetings & didn't feel that TW staff were taking on board my opinions. It felt more like a process of them appearing in order to 'push their agendas'. If water needs to be restricted, it should be balanced between cost & efficiency & lastly on this question, as I've stated in the 1st question, I feel very strongly that leakage needs to be reduced asap." (Household customer, OX13)

6.3. Options considered (Q3)

The highest number of comments were from those who are in favour of the water transfer option (30 of 101) and those who were opposed to the reservoir (32 of 101). Many of these respondents (but not all) were making the point that the water transfer option and/or desalination should be considered in preference to the reservoir. The clear majority of such comments came from domestic customers in the Oxfordshire /Berkshire region.

"Superficially, all these options address the simple objective of managing the future water supply in the context of a growing population and climate change. The options that bring more water into our resource-stretched region need much more prominence; transfer from the Severn and transfer via the Oxford Canal would bring additional environmental and societal benefits (recreation opportunities), additional desalination plants add capacity and can be close to high demand areas (i.e. London). Additional river and

groundwater abstraction is of value provided it is sustainable.” (Household customer, OX13)

There were also a significant minority of comments (12 of 101) in favour of the reservoir.

“I think transferring water using existing or renovatable waterways is a good option, I also support the building of a new reservoir at Abingdon, I live next to the proposed site and believe it will enhance the local area.” (Household customers, OX12)

Some comments related to the prioritisation of leakage and demand management:

“Demand management options should be prioritised. They seem quite narrow - with Smart meters surely demand related tariffs could be brought in.” (Thames Water employee/household customer, RG9)

“The plan considers the appropriate range of options. Demand management has an important role to play as part of a wider long-term strategy. However, demand management on its own will not be enough. London also needs to pursue major new water supply options - as are identified in the plan.” (London First)

“We strongly support focus on the demand management in the first 15 years of the plan. Reduction in leakage rates, installation of smart meters and Smarter Home/Business visits are all welcomed initiatives. In addition, we are very supportive of long-term planning (extending the plan to 85 years, instead of the required 25 years), as well as the built-in flexibility and adaptability. Regarding further demand reduction, we would encourage Thames Water to establish working relationships with local planning authorities and developers to actively support and encourage water efficient design of new homes and business premises. We expect that active promotion of innovative designs such as grey water systems, water efficient plumbing, rainwater capture systems, drought resistant landscaping and similar, would have a significant potential to further reduce demand for water in the context of an increasing population.” (London Wildlife Trust)

Some felt that they have insufficient information to comment, and others queried the basis for the cost calculations and whether all options have been given equal consideration.

“I think you have done a good job overall but am concerned about the figures I have heard regarding the latest proposal for a reservoir at Abingdon and the stated costs to install and run/ maintain a pipeline from the River Severn across to the Thames/ Severn canal. The cost will be scrutinised and probably challenged, perhaps at a public tribunal. It is all too easy to try to hide numbers/ remove an option by using Severn Trent water sales carts as

the telling argument (or not challenging their costs to you, simply because you do not want a pipeline or it is a more challenging option)." (Feedback form; anonymous)

Pang Valley Flood Forum queried the basis of the calculations, particularly whether the actual hydrologic/water resources status of this scenario had been assessed beyond its stochastic quantification and if the planning had taken into account that severe regionally extensive drought conditions could have serious implications on many of the proposed water supply options.

6.4. Approach taken to develop plan (Q4)

6.4.1 How reflected priorities of customers

One third of respondents did not respond to this question. Of the other responses, most either related to opposition to the reservoir, or were generally positive.

"The bottom left box on P.17 refers to "reflects the preferences of our customers" it does not explain how. Given the huge opposition locally to the reservoir and the outcome of the public enquiry in 2010, how is it that the reservoir is still included? Research on customer preferences seems to be slanted towards your preferred options." (Household customer, OX13)

"I think that you have researched well and am happy that you have taken all points on board and will do the best for all – public, environment and sustainability. The proof will be in the pudding when you start to implement them - you must be efficient on all levels." (Household customer, RG5)

"The plan does a good job in identifying options and assessing them against key criteria. If anything, our biggest comment would be on pace - London needs greater resilience now." (London First)

6.4.2 Shortlisting of options

A relatively high proportion of respondents (56 of 101) either did not comment on this question (31) or indicated that they felt that they had insufficient information to make a comment (25).

Many others used it as an opportunity to reiterate their views on their preferred option, for example their opposition to the reservoir or their preference of the water transfer option – again these comments came almost exclusively from domestic customers in the Oxfordshire and Berkshire area. Many of those opposed to the reservoir were critical of the assumptions made and expressed their perception that there has been selective use of data.

A minority of those responding (1 in 10) were positive about the shortlisting approach and how it is presented in the plan.

6.4.3 Consideration of environmental and social impacts

Over one quarter of respondents (28 of 101) stressed that Thames Water needs to take the full environmental impact of its plans into account. Some queried the basis for the environmental assumptions.

"You show the 'River Severn transfer' as having a relatively low environmental impact but a good volume of water transfer. If the transfer could be done via the Cotswold Canals, your local customers would give you lots of 'brownie points' for following a good environmental solution, good volume return and helping provide a new linear corridor for all canal users - a vast variety of the local population and with a wide variety of interests and canal usage, boats actually coming quite low in the list." (Feedback form, anonymous)

"Don't pitch something as the 'most sustainable' unless you have truly considered all the long-term impacts. Do the cheapest options and the environmental options really align?" (Thames Water employee/household customer, RN4)

"From background documents, a lot of consideration has gone into this. But all the same, the preferred option looks very much like the cheapest option and nothing like the option with least environmental impact. Having said that, you made clear earlier that desalination was very high energy intensity, so it's actually surprising that that is a key feature of the option with the least environmental impact." (Household customer, N4)

Just under one third of responses (30 of 101) linked the consideration of environmental and social impacts to their rejection of the Abingdon reservoir option – again these comments came from domestic customers in the Oxfordshire and Berkshire area.

"I have not seen any evidence of how you have considered the societal impacts of your options, and the environmental impacts are only superficially addressed. It would help if you gave an option that does not include the reservoir the same level of analysis as the others - this option would score highly for environmental impact as it eliminates all the construction issues, unknown impacts of concentrating that mass/volume of water on the flood plain, loss of high grade agricultural land (which will be in increasing need as the UK becomes more self-reliant post-EU)." (Household customer, OX13)

The London Wildlife Trust welcomed the fact that the process included Strategic Environmental Assessment (SEA) and analysis of compliance with the Water Framework Directive (WFD) and this resulted in some options being rejected at an early stage. They also cited good examples of investment in projects, such as Woodberry Wetlands and Walthamstow Wetlands. However, they raised issues with some of the options that have remained in the plan and call for a full SEA analysis once mitigation requirements are clearer.

"Some areas of the preferred programme, such as the mitigation requirements for the impact of abstraction above Teddington Weir, are not fully understood. This raises questions of potential environmental and social impact of further infrastructure that would be needed to mitigate the adverse impact. In addition, there are still concerns about the impact of Beckton desalination scheme on the WFD 'no deterioration' requirement. We recommend a full SEA analysis is carried out once the mitigation requirements are fully understood." (London Wildlife Trust)

One quarter did not comment and a further one in ten felt that they had insufficient information to comment.

6.4.4 Alternative programmes of options

Just under two fifths of respondents (39 of 101) did not answer this question and a further fifth (19) indicated that they felt that they needed more information to make an informed comment. Of other responses, most related to opposition to the reservoir (all from domestic customers) or generally positive comments.

"The selection process is technical and to some extent outside of our scope of knowledge, however at the level that we can understand them they clearly make good sense - the most sustainable (yellow) option seems the best." (London Wildlife Trust)

"The way the four columns on page 17 are constructed is very arbitrary with no explanation behind the classifications. It looks to me like a case of: "the answer is the reservoir, now - what's the question?" I also understand from GARD that they have it on good authority that your proposed reservoir is not very resilient - have you taken this into account?" (Household customer, postcode not given)

"Once again I think you have considered all options fairly and have chosen the best route accordingly. It is great that you have consulted the public." (Household customer, SE28)

A small number of respondents asked for other options to be considered, for example, recycling, rainwater harvesting and desalination.

"I haven't enough information to comment on this nor do I feel I understand what you mean by 'sustainable' as for example you say a desalination plant has a low environmental effect and does well at coping with future challenges. We know the costs of desalination are reducing with the new technological developments so surely it should be 'sustainable'. Why isn't it?" (Feedback form, anonymous)

"Desalination should be investigated further; innovation in this area to reduce cost and energy would be transferrable around the world and seems the much longer term approach." (Thames Water employee/household customer, RG41)

The Cotswold FlyFishers disagreed strongly with the approach adopted by Thames Water and indicated that they share the views expressed by the Angling Trust that the alternatives presented are not the appropriate ones and that the WRMP does not offer robust environmental protection.

6.5. Overall comments on proposed plan (Q5)

When asked to give their overall comments on the plan, around one-third of respondents (32 of 101) mentioned leakage reduction targets. Other comments related to water efficiency and new water supply options (specifically the reservoir and water transfer). These topics are covered in detail in Section 6.6.

One fifth (19 of 101) made generally positive comments about the plan but a similar number (17) indicated that they felt that they needed further information to make an informed comment.

6.6. Comments on specific aspects of plan (Q6)

6.6.1 Reduce leakage

Concern about the level of leakage was a prevalent theme. Respondents link a perceived lack of ambition on leakage in their responses to questions relating to drought and water supply options. There is a strong call for leakage to be tackled in the first instance in order to reduce the need for the development of new sources of supply and drought mitigation measures.

Nearly half (38) of those who responded (80) to this question felt that the leakage reduction target should be higher.

"How nicely phrased. You intend to reduce leakage from 25% to 22%. The minimum required of you by OFWAT. It is not normal to describe the minimum required as an ambitious target." (Household customer, OX13)

Some linked action on leakage to the company having greater leverage over customer behaviour change and stakeholder support for wider plans.

"Targets have to be challenging as it is difficult for the company to ask people to change their behaviours when the company is losing water itself." (Household customer, RG41)

"We support renewed vigour in tackling leakage. We recognise the complexity and age of London's network which limits the extent of cost-effective interventions, but believe stakeholder support for any long-term

plan would be strengthened by greater ambition on leakage. Given the significant potential impact on London's roads, we would also want to see greater innovation in how leakage is tackled so as to reduce the impacts on traffic.”(London First)

Environmental benefits of reducing the amount of abstraction required were also cited.

There was some acknowledgement (mainly by stakeholders and employees) of the impact of tackling leakage in terms of disruption and the potential impact on customer bills, but still a frequent call for more stretching targets.

“While any effort to reduce leakage is supported this target should be more ambitious. TW should aim to reduce leakages by a minimum percentage and plan to exceed its target. Addressing leakages should also be prioritised over water trading with RWE Npower. However, this should be balanced against significant increases to water bills.”(London Borough of Newham)

6.6.2 Continue household metering programme

The majority of comments were in favour of the household metering programme because having a meter was perceived as being an effective way of reducing consumption and as being a more equitable system (following the model used for other utilities).

“Having had one since early 90s, I think everyone should be on a water meter. It would focus consumers’ minds on usage, rather than taking it for granted. Surely, the only people to object to this are people who are over consuming.”(Household customer, RG14)

Around one quarter of responses (23) called for a faster rollout of the programme and greater ambition in targets.

“You are only aiming for 75% by 2035 when Southern Water have already achieved 88%. Stop making excuses and get on with the job.”(Household customer, OX13)

“Given this view on the benefits of metering, why is Thames Water not simply going all out to install meters in every household as soon as practicably possible? Surely this will be supported by customers, Ofwat, Environment Agency and government.”(Pang Valley Flood Forum)

London Borough of Newham commented that it would be helpful within the draft WRMP to demonstrate how effective they are compared to direct methods of reducing consumption, such as water efficient appliances, water butts and energy saving plumbing fixtures.

Some household customers queried if all new build homes in the Thames area have meters installed. Other respondents made the point that an education programme needs to run alongside the metering programme to ensure its efficacy.

A small minority of respondents were concerned that meter installation should remain voluntary and were concerned about the impact on bills.

6.6.3 Promote the efficient use of water

There was strong support for more focus on demand management in the plan, with mentions of the following:

- Greater use of smart meters.
- Higher tariffs for water over-use.
- Encouraging rainwater capture.
- Facilitating the use of greywater.
- Liaison with developers/local authorities.
- More customer education about water conservation (through schools, community groups and social media).
- Partnering with other organisations/other water companies to spread the message.

"Much more must be done. I do not recall seeing any publicity regarding reducing water consumption, with the exception of the general panic which ensues when there is a drought. This must take a much higher profile so that consumers are in no doubt as to the limits and value of our water supplies."
(Household customer, postcode not stated)

Several respondents (a business, a Thames Water employee and a stakeholder organisation) suggested the exploration of reward-based schemes:

"There are several mentions of reward-based incentive scheme to promote water efficiency in the documentation, but it seems that the roll-out is postponed towards the later stages of the plan. We would encourage TW to further explore incentives as a tool to reduce water use and implement the scheme sooner. We would also like to see specific incentives linked to voluntary water use reduction during drought periods, and in areas dependant on water from sensitive sources."(London Wildlife Trust)

London Borough of Newham suggested a quarterly newsletter should be published on a dedicated webpage and also emailed to the relevant personnel at local authorities and those within the construction industry. The newsletters should promote sustainable solutions, include case studies and highlight costs and benefits. It could also include details of any pilots and available funding.

Some, particularly opponents of the Abingdon Reservoir, pointed out that if action is taken to reduce demand then large new water resources may not be required.

A small number of respondents queried the impact of efficiency measures and suggested prioritisation of leakage reduction.

6.6.4 Take more water from the River Thames at Teddington Weir

Of those who expressed an opinion, there was a generally positive response to the Teddington Weir option – it was seen as a sensible and pragmatic solution.

"An innovative solution which effectively creates new water available for turning into potable water." (Household customer, OX49)

"If it is sustainable then it is worth doing, especially as it brings supply closer to the area of greatest demand." (Household customer, OX13)

Caveats were that the impact on the environment is considered (in consultation with the Environment Agency), as well as the impact on the local community and drinking water standards. One respondent also questioned the amount of energy involved.

"We understand that Thames Water is working closely with the Environment Agency to identify what mitigation will be required, as the abstraction above Teddington Weir is likely to be incompatible with the 'no deterioration' requirement under WFD. We expect that the resulting mitigation measure will ensure that ecological status of River Thames doesn't deteriorate, and also expect that the full environmental and social impact of potential mitigation measures is understood, considered during the scheme selection process, and any unavoidable impacts appropriately mitigated." (London Wildlife Trust)

Some respondents were strongly against this option – fearing the adverse environmental impact and/or its feasibility.

"This option will have consequences in the estuary. We have seen in the Thames and elsewhere that periods of low flow can create very hostile conditions for fish and other wildlife. It would be better to leave the water in the river, except perhaps extracting some of peak winter flood levels for storage....Proposals to abstraction water directly above Teddington Weir would result in a net loss of 270 ML/day from the estuary, which is an important Bass Nursery Area (BNA). The higher temperature and lower dissolved oxygen levels of effluent input above Teddington Weir are likely to have impacts for coarse fish and invertebrate populations during the autumn and winter months." (Wild Trout Trust)

"It will be costly and ineffective. If it was this easy to treat final effluent to such a high standard then we wouldn't have any pollutions and would have no impact on the environment. Its arrogant and short sighted to assume we can invent a magic new solution. Ultimately its' just a way of finding a little more water to put off the inevitable need for a major new resource." (Thames Water employee/household customer, SN4)

Almost half of respondents (46) did not give a view. Of these, some indicated that they were unable to give an informed view because of the technical nature of the plans.

6.6.5 Provide new water supply in the long term

Respondents were asked about their views on the provision of new water supply in general and could, therefore, choose to reply in general terms or about one or more of the specific options.

Some respondents were encouraged that Thames is planning ahead and thinking about future resilience. Others felt that it was important to prioritise leakage rather than the development of large infrastructure projects.

Abingdon reservoir

A significant sub-set of comments in response to new water supply in the long term related to opposition to the proposed reservoir. These tended to be from those living in the vicinity who, as has been indicated, made up a large proportion of respondents to this open access consultation. These respondents also called for greater consideration of other options, such as desalination and water transfer from the River Severn.

"I believe you should be driven by the need to: a) conserve existing water supplies, b) bring new water into the Thames area and c) recycling water for re-use. Therefore, the focus should be on fixing leaks, bringing water from the Severn and desalination. Forget the reservoir - there are huge negatives associated with it which you consistently fail to mention." (Household customer, postcode not given)

London Wildlife Trust highlighted some potential impacts that will require mitigation regarding construction and operation of the proposed Abingdon reservoir. These included impacts on wildlife in the Thames downstream from the abstraction and input points; impacts of associated infrastructure; and impacts on groundwater levels in surrounding areas (including protected areas in Cothill). They also advocated for provision of maximum wildlife gains.

Some stakeholders, such as the London Borough of Newham, London First and the Wild Trout Trust were in favour of the reservoir.

"We would like to see greater urgency and ambition on new water supplies. The proposed reservoir seems to strike a good balance between all of the criteria and should be accelerated."(London First)

The Wild Trout Trust cited a number of benefits of the Abingdon reservoir in their response:

- Ability to store water during times of surplus resulting in increased resilience.
- The provision of additional capacity to give scope for reductions in unsustainable abstractions from chalk streams.
- Support neighbouring water companies, particularly Affinity Water which is without surface water storage and relies on abstractions from groundwater that would otherwise feed some of Greater London's most valuable chalk streams.

Other water supply options

There were relatively few comments on other specific water supply options.

The London Borough of Newham noted that the principle of expanding the operational capacity at Beckton is included within the Newham Local Plan but called for early pre-application engagement with the Council and the local community to develop a suitable scheme. They also noted that if the abstraction scheme at Teddington is unviable that the Beckton reuse scheme would be brought forward to meet growth in demand. This would necessitate engagement with the Council at the earliest opportunity.

The Wild Trout Trust expressed concerns about the environmental impact of the Beckton scheme:

"The proposed water reuse scheme at Beckton would represent a significant carbon output and is likely to result in ecological deterioration of the Thames estuary through changes in salinity. The estuary has been the subject £4.2 billion improvement scheme in recent years and now represents a recovering recreational fishery for both coarse and estuarine species."(Wild Trout Trust)

6.7. Water transfers from other water companies (Q7)

Around one quarter of respondents (26) was in favour of this option; some of these advocated setting up a regional or national grid. Many of those opposed to the Abingdon reservoir were positive about the option of water transfer.

"Bringing water from other regions is essential to resolving the South East's problems in a sustainable way. Other regions make good use of water transfer already and ambitious schemes to bring water into our region would promote Thames Water as an environmental champion. Perhaps this could become the basis of a regional grid?"(Household customer, OX13)

"The problem of reduced water supply is not going to go away, so there has to be a long-term plan to make sure the South East does not become a desert. Transferring water from areas that have surplus is the most logical, and shouldn't be a long-term plan but one we are planning for now."
(Thames Water employee/household customer, RG4)

Hertfordshire County Council was positive about water transfer in principle although stressed the need for good partnership working and planning/infrastructure development well in advance.

London First made the point that the National Infrastructure Commission makes a good case for further detailed analysis of this option.

Some respondents expressed a strong preference for TW to be self-sustaining rather than rely on other water companies, particularly when those areas may become water stressed themselves in future.

"How robust and affordable are these services in the medium term given the pressures other water companies will have from climate change, population growth and environmental restrictions from the Environment Agency? These appear very risky without increasing resilience in the Thames Water area."
(Household customer, OX49)

"There are ecological risks and Environment Agency climate change models suggest that within decades, these areas too will see significantly less summer rainfall. There is, therefore, a risk of displacing pressure on supply across a wider area." (Wild Trout Trust)

Those opposed to the idea also cited the environmental impact and cost. Cotswold Flyfishers expressed two key concerns:

- The potential to move high algal loadings and invasive non-native species (INNS) into the Thames Catchment from the River Severn.
- Climate modelling suggests that droughts are very likely to become increasingly coincident between the Thames and Severn catchments in coming decades, meaning that water transfers in the future may become unviable during dry periods (when they are required most).

6.8. Other comments (Q8)

Around half of respondents answered this question. Most used it as an opportunity to reiterate their views expressed in earlier questions relating to their opposition to the reservoir and querying of population data used, for example:

"As an ex university teacher, I am used to students choosing facts which support their thesis, even when the majority think differently. I note that you use official figures when they suit and then find one university which seems

to be at odds with Government population statistics which are supported by the majority of academics.” (Household customer, OX13)

There were some mentions of the importance of reducing consumption and recognition that water is a precious resource. Just over one in ten responses were generally positive statements about the plan/engagement.

In terms of specific individual comments from stakeholders:

- Hertfordshire County Council question if there is enough planning of waste water in the plans, given growth.
- Cotswold Flyfishers called for water resource planning to be conducted at a regional level, with the introduction of a statutory requirement for regional WRMPs alongside the establishment of regional planning bodies that include customer and stakeholder representation.
- Pang Valley Flood Forum feel that the summary WRMP falls short of giving lay people the information required to provide constructive feedback and gave a detailed list of its perceived failings.

7. Customer research responses

This section summarises the responses of the online community, participants at the customer workshops and responses to the 'Shape your water future' Engagement Tool. The online community were asked all of the consultation questions (in two phases so as not to overwhelm them). Discussions at the workshops focussed on the proposed plan rather than the early consultation questions about the development of the plan. The responses to the engagement tool in relation to drought and leakage have been included within sections 7.1 and 7.31 respectively. These customer research responses provide a more broadly representative customer perspective because the samples were recruited to represent the Thames water customer base, rather than being self-selected as was the case with those who responded to the open access online survey.

7.1. Severe drought (Q1)

Respondents were asked to comment on Thames Water's plans to maintain all customers' water supply with no need for it to be rationed during a severe drought by 2030. They were given options of delaying the work by five years or speeding it up by three years, which is the earliest that it can be delivered.

One quarter of online community comments were positive about the fact that Thames Water is thinking ahead. Customer workshop participants were reassured that Thames Water was putting in place measures to ensure that the water supply could cope with a severe drought.

"Like what's happening in South Africa, I know that we are not anywhere near the kind of, we're not like South Africa, we are not likely to have that kind of drought soon. But, you know, that's pretty terrifying." (Customer workshop participant, Teddington)

"It's quite a scary thought to think we may not have enough water in the near future it feels like we're going backwards. But it's good to see Thames Water planning ahead and making changes." (Online community, household customer, RG6)

Around two fifths of the online community gave a comment that related directly to one of the three options. Of these, the majority felt that work should be speeded up. This was also the case for those who participated in the customer workshops.

"We need to take the option of speeding up the work so we can maintain all of our water supply by 2027. The projected variables could change, maybe for the better but also for the worst. The old saying of "never put off until tomorrow what can be done today" springs to mind. I feel that we should try to get ahead as quickly as possible." (Online community, household customer, BR3)

"It would seem sensible to complete the work as soon as possible (by 2027). There may be many unforeseen obstacles and developments in terms of population growth and climate change which will require new solutions and make any delays even costlier." (Online community, household customer, SE23)

"Because of the statistics I've just seen now about population growth, and my own personal worries about climate change, I would want it to happen sooner even if there's an extra cost. Because you don't know when it might happen." (Customer workshop participant, East London)

Some workshop participants and online community members felt that there was an argument for not doing the work too quickly if there is a risk that the work is not done properly or if the money spent on speeding up the process could be better spent elsewhere.

"Obviously it would be better to speed up the work (just in case) but if through good practice this can be delayed then the money saved could be put to use elsewhere." (Online community, household customer, IG7)

"I don't think anything should be rushed or speeded up. The most important thing is that the work carried out is going to last for the long term and customers will be supplied with fresh clean water." (Online community, household customer, SE26)

Respondents to the 'shape your water tool' engagement tool were asked to select their preferred service level in terms of drought and were given the cost implications of their chosen service level. Responses were more mixed:

- 25% wanted a higher service level than what was proposed.
- 40% supported Thames Water proposed service level (maintaining all of customers' water supply during a severe drought by 2030; meaning no change to customers' bill).
- 35% wanted a lower service level.
- Overall, a majority of respondents (approximately 55%) selected a level of service of either 2029 or 2030.

There was also some call for further information, particularly on cost and any the advantages and disadvantages of each option, before an informed decision could be made.

"I think it makes sense to plan to maintain customers' water supply. This will help avoid scenarios like what's happening in Cape Town at the moment. Developing three alternatives is a good idea... would need to know more about each one to work out the best option." (Online community, household customer, E17)

"I don't feel I have enough information at this point to comment, my initial view is that we shouldn't be trying to maintain supply for a "once-in-200-years" event." (Online community, household customer, GU10)

"If the work was sped up does that mean it would cost a lot of money?" (Customer workshop participant, Teddington)

Some related this question to the issue of leakage and felt that it is a further argument for greater ambition in terms of targets.

"The pressures on the water supply in the South East are quite alarming and not many residents of the area would be aware of them. It is good that TW are planning ahead to mitigate any impact on severe drought but so far it is not clear what action you will take. It seems that a lot of energy and money is wasted treated and storing water only for 25% of it to be lost to leaks. This is an outrageous amount of loss especially when the South East is so pressured in terms of its water resources. Expeditious action to reduce leaks should be undertaken in as short a time as possible as presumably this would have a significant impact on the supply. Of the 3 timescales proposed I would suggest the shortest time frame is most sensible." (Online community, Household customer, RG30)

Customer workshop participants discussed the repercussions of a drought and what sort of restrictions would be manageable. For some, their response to Thames Water's plans depended on how severe these might be, for example, they could live with hosepipe bans, but not having water switched off altogether, or how long restrictions would last. Some participants felt that people were using water extravagantly and that more education was required to teach people not to waste water. Related to this there was also some discussion as to whether actually living through a drought might be a good catalyst to encourage people to use water more carefully in the future.

7.2. Approach to developing plan (Qs 2-4)

Most online community members felt that Thames Water's approach to developing their plan was sound, in that it reflected the priorities of customers, and they felt that they understood how decisions had been made. They were broadly positive about the overall proposed plan, assuming it can be delivered without a significant cost impact for customers.

"It looks like you have consulted and listened to feedback before developing the plan i.e. not going with the lowest cost after talking to customers." (Online community, household customer, IG8)

There were a many positive comments in response to the questions on how well the plan reflects customer priorities (nearly two-thirds made a positive comment)

and regarding the consideration of alternative options and environmental and social impacts (around half made positive comments to each question). Over one third made positive comments in relation to the questions on the summary of customers' views, the options considered and the shortlisting of options.

"I can't believe how many options there are. I know that obviously some will cost more than others and some will take more time but knowing that Thames Water have considered all the options available makes me feel very reassured as a customer." (Online community, household customer, SE26)

"It looks as though Thames Water has taken steps to find out what customers want. Their responses seem to contain more than a dose of common sense."(Online community, household customer, RG41)

"I believe the approach has been very measured. Firstly, by taking into account the customers' opinions and giving them a voice in what is important to them. Second priority is to implement a plan with the lowest risks and have taken into consideration an effective and low cost plan, which is important for the customer and also the way the plan shares the costs with this generation and future generations and taking their future water needs into consideration."(Online community, non-household customer, N12)

"It's sensible that TW have included review points in the long term planning as things can change and attitudes to environmental issues and expectations and priorities of 'consumers' can change. Government priorities can change too but Gov't normally have short term planning and the management of water resources is too important to leave to government policy whims." (Online community, household customer, RG30)

Very few online community members responded negatively to these questions – if they did not make an explicitly positive comment, members tended to use the questions to reiterate their views on which aspects of the plan were important to them (for example leakage or educating customers about water efficiency).

"The number of leakages I've seen within my daily travel since the last Christmas is disappointing. I would've expected Thames Water to get leakages reduced significantly by now. In order to get community support for in tackling the challenges ahead Thames Water need to improve and reduce leakages in order to convince customers that they are a responsible supplier who take their responsibility very seriously. Water leakages don't only affect supply of water they disrupt life and activities of local residents too so they stand out like a sore thumb; generating negative comments/feelings towards Thames Water."(Online community, household customer, BR1)

"I believe most of the people I know do not realise the water supply problems. We do need to know what exactly to do to save water. Somehow it is trying to overcome the selfish approach and get the community to play

their part when necessary. In the meantime, to also learn good habits."
(Online community, household customer, EN1)

"I agree with most of the customer views, however I would focus on the comment that most are unaware of the challenges for future water supply. More should be done to educate us on statistics such as rainfall being quite low in the UK, the cost of new developments to improve the saving of water. Educating people in how to save water in the home. Supplying rain saving devices to use in the garden and other areas where water is needed, but not saved for human consumption. A good understanding and transparency will help people appreciate and understand the importance of water as a commodity."(Online community, non-household customer, N12)

There was some call for greater consideration of the desalination option, with one in seven online community members making positive comments in relation to this. However, there were a handful of members who spontaneously raised the disadvantages of this option.

"I think the desalination option would be best for long term investment given that there is almost unlimited supply of sea water." (Online community, household customer, KT5)

"Desalination? This is often discussed (in the media) but I guess the only reason it has never been done is that the costs are too prohibitive... otherwise it does make a lot of sense as an island surrounded by water!"
(Online community, non-household customer, GU3)

"Desalination should be a last resort due to the cost & effort involved, and the use of a substantial amount of electricity."(Online community, Household customer, OX2)

A small number of online community members cautioned against the views of customers being too influential (to the detriment of other factors) and some questioned whether Thames Water could ever truly capture the voice of the customer, given the diversity of the customer base.

7.3. Overall comments on proposed plan (Qs 5 & 6)

Nearly two thirds of online community members indicated that they were positive about the overall plan. A further fifth did not comment.

"I feel that the plans are ambitious and wide-ranging, and if activated properly should see the company in good stead for a very long amount of time."(Online community, household customer, N15)

"I believe Thames Water plans are well planned. Thames Water and other water companies must work together to ensure water supply is maintained in

the future by sharing and exploring new innovations.” (Online community, other, E17)

As was the case with the response to other questions, some online community members referenced high leakage rates. A small number also questioned whether the plan was deliverable.

“All of this is fairly well explained and clearly laid out. I agree with the proposal and it seems to prioritise initiatives in a logical way. There are no surprises in here for me. It makes sense to tackle leaks first before focusing on the other points.” (Online community, household customer, E17)

“Overall it seems good. But there is not enough self-criticism. 25% of water lost in the system is fairly outrageous, although I suspect in the long run the reason why this is tolerated is because it is cheaper to build more supply than fix every leak.” (Online community, household customer, IG8)

7.3.1 Reduce leakage

One third of online community members indicated that they felt it was positive and important to have a leakage target and similar proportions felt that the target needs to be higher and/or that leakage needs to be the company’s top priority. Some called for the date by which this target is met to be brought forward.

“Is that not too little to achieve? Do you think more priority can be given if possible?” (Online community, Household customer, RG30)

Customer workshop participants were also shocked at the amount of water that was lost. They felt that it was absolutely vital that this be reduced significantly, and thought that this should be the absolute priority for Thames Water before looking for alternative sources of supply (not least because so much water from these new supply sources would also be lost to leakage).

“They’re losing so much through leakage every day, and they’re trying to find water sources to add to the system. Surely they should fix the leaks.” (Customer workshop participant, Abingdon)

“They’re losing one in four litres. Any other business that runs with 25% wastage wouldn’t survive.” (Customer workshop participant, Teddington)

Respondents to the ‘Shape your water future’ engagement tool were asked which of two options they preferred but (unlike those responding to the WRMP plan) they were given cost information. They were told that the proposed plan would mean no change to the average household bill.

- 52% of respondents wanted a higher service level (than the reduction of 15%)

- 48% supported Thames Water's proposed service level.

"...As present, the approach seems to deal with leaks reactively; this tends to cause other leaks, so rather than patching, biting the bullet and dealing with larger areas might lead to fewer leaks and less water wastage."
(Engagement tool, household customer, SE23)

Many customer workshop participants recognised that it was not a straightforward issue – that Thames Water was having to cope with the legacy of an ageing infrastructure, and that fixing leaks would result in significant disruption, not just to them in terms of traffic issues from roadworks, but also local businesses.

"It must be a bit like painting the Forth bridge – you have to keep doing it."
(Customer workshop participant, Lechlade)

However, many considered that it would be worth it. They felt that more could be done to minimise disruption (for example, utility companies working with one another to coordinate works) and to inform customers and businesses about upcoming roadworks.

There was some concern about whether the leakage target is deliverable. A small number of online community members referenced the previous missed target. Some queried how leakage is monitored.

"It's a good objective... but I recall that last year TW didn't meet its pipe renewal plan for the first time in years? Surely MORE FOCUS should be paid into this area... you can't pour water into the bath with a plug out!" (Online community, non-household customer, GU3)

Some online community members and workshop participants made reference to leaks in public areas not being fixed quickly. Workshop participants also wanted reassurance that leaks would be fixed for the long term – they felt that it is important that it be done properly now to avoid further leaks down the line.

"Some leaks are probably easier to fix than others. The disruption to roads, (as most water pipes run beneath roads or public spaces) will be significant. I have lived in London for many years and experienced the very long process of repairing leaks through South London about 10 years or so ago. However, appropriate explanatory publicity can help alleviate much of the angst caused to residents etc. It really has to be carried out." (Online community, household customer, SN8)

"It's like short-term gain and personal perspective, versus long-term gain and community perspective. I would rather pay more and get more done in this lifetime." (Customer workshop participant, Teddington)

There was a belief amongst some workshop participants that increasing the target to a higher level might make it more likely that Thames Water would achieve the 15%.

"You are more likely to get 15 if you aim for 20 as well. "Shoot for the moon and you might get to the stars", and slightly beyond." (Customer workshop participant, Teddington)

7.3.2 Continue household metering programme

Online community members and workshop participants were generally favourable about the household metering programme, feeling that it was a fairer system and that it was an effective way of reducing household consumption.

"It's a good idea, it becomes a lot more equitable and people will pay what they use and become more aware of what they're using so there will be less wastage. It will impact bills so people will think more about usage." (Customer workshop participant, Abingdon)

It was felt by workshop participants that the intention to install a further 400,000 smart meters in customers' houses seemed a relatively small number, and many felt this should be higher. For some this was an issue of equity – it did not seem fair that some would be metered and others would not be.

"The majority of people still won't have water meters so it doesn't seem very fair. They'd still be able to waste water." (Customer workshop participant, East London)

There were calls for an awareness raising campaign about the benefits of metering in terms of reduced costs and consumption and also for consumer education at the time of installation.

"I think metering is a good thing. As long as it comes with information about ways you could reduce your water. Or, suggested targets maybe, not targets but you know, the information provided when the meter goes in needs to ... give information about how you can use water wisely." (Customer workshop participant, Lechlade)

"Again, a good start but I feel that the public / customers should be made aware more often of how a water meter could help them to save money as well. Most people seem to think that if they have a water meter they will be paying more, not less." (Online community, household customer, BR3)

"Excellent. A meter has always made me try to improve the amount of water I use. Also, many folk without meters take a more selfish approach to what they use." (Online community, household customer, EN1)

There was a degree of cynicism amongst some online community members and workshop participants about increased costs for customers and who benefits from meter installation. Several pointed out that metering is not possible for all types of property. A minority of workshop participants were also strongly opposed to meters, particularly the idea of compulsory metering. Objections ranged from feeling that meters unfairly penalise certain households; to cynicism about the motive behind them (with a suspicion that they are about profits rather than water saving), and some simply didn't want to have to reduce their water consumption. A few people were worried about smart meters in particular because of concerns about data privacy. A number of participants also sought reassurance that businesses were also being metered.

"It's draconian because it's Big Brother. It's basically saying we want to know exactly how much water you are using on a personal level. What they should be saying is we know we've got 300,000 houses in this particular geographic area and therefore on the basis of 150 litres a day, this is how much we'll need... Larger families shouldn't be penalised in this way." (Customer workshop participant, Teddington)

Some referenced the fact that metering may not be popular with customers and so Thames Water needs to act on leakage in order to ensure customer buy in to demand measures. A small number of members call for an incentive scheme to help 'sweeten the pill'.

7.3.3 Promote the efficient use of water

Around half of online community members indicated that they felt that there should be more promotion of water efficiency measures. There were numerous positive mentions about education, particularly of young people. This was an area that was mentioned spontaneously in customer workshops as being ripe for further work, and people were pleased that Thames Water was focussing on this. They thought it was important that people were informed of both the reasons for using water efficiently, as well as how to do it.

"Lots of people would buy into this. People have adopted recycling and get more efficient appliances. People are on board with trying to make a difference. People would opt in if we told them what to do." (Customer workshop participant, Teddington)

It was noted by some that the amount of water saved through water efficiency measures was minimal in comparison to the amount lost to leakage, but it was still felt by most to be an important part of the overall plan.

"How much are they going to spend though to save us 24 million litres of water, compared to the 640 odd that's being wasted?" (Customer workshop participant, Teddington)

There were a small number of positive mentions of using less treated water to flush toilets and of Thames Water encouraging developers and manufacturers to design products/buildings which use less water. One member suggested that Thames should learn from practice in other water-stretched countries and another queried whether non-household customers were being supported to use less water. These points were echoed by discussions amongst customers at the workshops.

Some linked the promotion of efficient use of water to the metering programme and some queried the efficacy of education, citing the need for cultural and behaviour change. There were some concerns amongst workshop participants about the approach to encouraging water efficiency, with a feeling that home visits were unlikely to be a cost efficient way (compared to blanket advertising). They were worried that people would not be taught anything new.

"This (promoting water efficiency) goes hand in hand with the metering. People will want to make more efficient use of their water if they are paying for it." (Online community, household customer, RG1)

"Yes, but you need to really look at how this should be done that will actually deliver a result. A generic information and advice with signposting is unlikely to be as effective as you may feel. Identifying not only the behaviours but also the environmental social and cultural pressures along with the time/resource/finance constraints in households and public and private premises so that efficient and workable solutions are promoted will obtain a better take up and change of behaviour." (Online community, household customer, CR0)

"They're telling you how to flush a toilet. People generally know, if they've got two buttons on their toilet, that's one's a long and one's a short flush." (Customer workshop participant, Teddington)

Others made the point that they had no awareness of Thames Water's current activity in this area. A small number gave a negative response, citing the cost implications of Thames Water promoting efficiency measures.

7.3.4 Take more water from the River Thames at Teddington Weir

Online community members and workshop participants were in the main guardedly positive towards the idea of Teddington Abstraction, although many wanted reassurance about the environmental impact and its sustainability.

"I like this plan because it is innovative and proactive. It also shows infrastructure spending and invests in the future." (Online community, non-household customer, SN1)

"Taking water from Teddington Weir is only acceptable if there is not detrimental effect on the environment or local area." (Online community, household customer, GU2)

"What impact will this have on the River Thames in the long term? How long can we carry on taking more water in this way? Is this sustainable for the foreseeable future?" (Online community, household customer, BR3)

"It sounds good for me if I'm a customer and I want lower bills, but not so hot if I'm a fish in the estuary." (Customer workshop participant, Lechlade)

Workshop participants felt that it seemed a pragmatic solution and particularly liked the fact that it provided a significant amount of water compared to some of the other options. They also liked the fact that it could be done quite quickly. Some had already discussed the idea of reusing brown water and so this plan chimed with their thinking.

"It seems to be the most feasible and the quickest and making use of the resources." (Customer workshop participant, East London)

Workshop participants in Teddington were interested in what the actual structure of the planned works would look like. They discussed whether it would be possible to make a building that actually enhanced rather than detracted from the area.

"I live along the river and walk along it a lot and don't want to see something ugly." (Customer workshop participant, Teddington)

"I'm sure there's a way to design it to make it look better. It might cost a little bit more." (Customer workshop participant, Teddington)

They felt that it was likely that people in the local community would be opposed to the overall plan (not least because it had happened in the past with the hydropower scheme that had been blocked), but that building something visually appealing might go some way to appease them. They also felt that it was vital that Thames Water conduct intensive community engagement to educate local residents about the plan and why it was necessary.

"Presumably if the Lensbury objected before they will object again?" (Customer workshop participant, Teddington)

"I suspect there will need to be a lot of community engagement for this to kind of land, because people are going to instantly dislike the idea of effluent in their water, of all the negatives. But I do think that people are overall reasonable, and if there is a decent communication thing around this, perhaps some of the community at least will jump on board with it." (Customer workshop participant, Teddington)

Some online community members wanted more information about how the option would work and about whether the local residents would be consulted about and disrupted by the plans. Some queried the cost implications for customers of this option.

"Water has to be collected from somewhere but what detrimental effect will this have on the wildlife in the area? What sort of cost is involved? Again, no information as far as I can see. We really need to know more about this part of the project." (Online community, household customer, RG41)

"Can this be done in a cost-effective way and if so why are we not doing it already?" (Online community, household customer, W3)

There were also some questions at the customer workshops about whether anything similar had been done elsewhere – whilst some liked the idea of trying something new, others wanted to know more about the potential risks and were worried that there might be unanticipated negative consequences.

"It's worth trying. It's not expensive and never been tried before, so why not?" (Customer workshop participant, Abingdon)

"It's not an option that's been used before so are there are downfalls we don't know yet." (Customer workshop participant, Lechlade)

7.3.5 Provide new water supply in the long term

Well over half of online community responses were positive in relation to the outline of plans for new water supply in the long term. Online community members were happy that Thames Water is thinking ahead and planning for the future.

"Thames Water have obviously done a lot of research on this subject and as a customer I feel reassured that the problem is being tackled now and not being left."

"This shows that Thames Water are always thinking of their options and shows forward thinking with regards the future supply of water for this and future generations." (Online community, non-household customer, N12)

A small number of online community members referred to the need for more ambitious targets in relation to leakage and demand management in order to reduce the reliance on the development of new water resources. Others wanted reassurances about the environmental impact, the cost implications and the safety of the various options in the plan.

There were relatively few comments on the individual options from the online community as they weren't directly asked for their views on specific options to provide new water supply in the long term. A small number of online community members spontaneously indicated that they preferred one or more options in particular (but this was 5% or less of all online community respondents in all cases).

"Using water from companies that haven't got as big a supply problem seems to be the most obvious solution to me." (Online community, non-household customer, E8)

"A new reservoir makes sense as it is a one-off building enterprise and can be managed more easily in one location." (Online community, non-household customer, AL7)

"A reservoir? Yes, a good idea but has the necessary fact finding work been done with regard to where this is going to be and what sort of impact it will have not only on the environment but also the people living in that area?" (Online community, non-household customer, RG41)

"I love the idea of reuse water so I think it's very positive that it is included as a future water supply" (Online community, non-household customer, RH1)

Abingdon reservoir – workshop participant views

The majority of workshop participants (including those in Abingdon) were very positive about the idea of building a new reservoir.

"I reckon it's the best idea on the table. They should be starting tomorrow." (Customer workshop participant, Lechlade)

"I think we all agreed on the reservoir being the best option, of all of them." (Customer workshop participant, Abingdon)

Workshop participants saw it as an investment in the future – not only for securing the water supply for future generations but also for providing recreational and leisure activities for the local community. The idea of it adding positive benefits to the environment in terms of rejuvenating wildlife particularly appealed, and they felt that it seemed more 'natural' than some of the other options, and less invasive. This option was also liked for being a tried and tested option, because of its familiarity customers found it easier to understand than some of the other solutions discussed.

"We can use it for leisure pursuits, there's something else that people can get enjoyment from it than just the water." (Customer workshop participant, Abingdon)

"I like the fact that there's not that much treatment required and involves less process." (Customer workshop participant, Teddington)

"I think it's the best option because it gives you a lot of water. I like the idea of doing something with the reservoir like fishing." (Customer workshop participant, East London)

"Environmentally, at the end of the day when this is all established, it's going to be beneficial for the environment as well. You know, wildlife etc." (Customer workshop participant, Lechlade)

Some participants in Abingdon did query why the reservoir needed to be built in that exact location, but by and large they were supportive of the overall idea.

"Reservoirs are a good idea as long as you've got space to put them." (Customer workshop participant, Abingdon)

"I think we came out in favour of the reservoir in terms of the roundness, it's the best idea using natural resources etc. But one thing we did question is, why that location?" (Customer workshop participant, Abingdon)

Abingdon participants knew that there had been a long-running argument over its construction and felt that a small minority was standing in the way of progress.

"You need to change with the times and can't live in the dark ages." (Customer workshop participant, Abingdon)

They thought it was unfair if those who were opposed to it managed to stop the construction. They felt that the people objecting should think about the wider picture of securing water supply and benefitting everyone (and thought that if they saw some of the information that they had seen, they might change their minds). However, they did call for businesses and households directly affected to be properly looked after. And while supportive of the overall idea of the reservoir in the long term, some were concerned about the impact of its construction. They felt that eight years was a long time to have to deal with the disruption of the build.

"Why choose a great big flat piece of land, you're going to cause massive environmental issues and traffic congestion, the road and infrastructure around here. Because I live here. And it will affect where I live. It's massively accumulated and choked up now. I think in fairness...there should be a commitment there also to improving the infrastructure of our roads system, because it's going to be destroyed." (Customer workshop participant, Abingdon)

Those living outside of Abingdon also recognised that the construction of the reservoir might have a negative impact on the local area, and that they might not be so positive about it if it was being built near them. However, they felt that it also had the potential to bring lots of opportunities to the area, for example, as a tourist attraction and to help bird life. Compared to some of the other options, this was seen directly impacting fewer people.

Many were of the opinion that if the land wasn't used for the reservoir, then it would be used for another housing development which would be worse for the community and 'less natural'.

Water reuse at Beckton – workshop participant views

Most participants were not particularly keen on the idea of water reuse, although some became more positive over the course of discussions as they gained a better understanding of how it would work. There was an instinctive aversion amongst many, who found it off-putting and 'less natural' than other options, particularly the reservoir. However, reaction to this option was less vehement opposition and more mild dislike – they were turned off by the overall idea as they didn't fully understand it and it sounded distasteful.

"It's not a particularly nice thought...that what you put down the toilet goes back in your mouth again." (Customer workshop participant, East London)

Beyond this initial squeamishness, participants' main concern with the idea of reuse was the amount of energy and chemicals required to treat the water. They assumed that it would be very expensive because it was so energy intensive, and they did not like the idea of retreating water as they were worried that it might change the water quality.

"We don't know if the chemicals are going to be poisonous." (Customer workshop participant, Abingdon)

"More chemicals is never a good thing." (Customer workshop participant, Lechlade)

"They tested the fish in that area about 15 years ago and their hormones were being affected by birth control chemicals going into the water." (Customer workshop participant, Teddington)

However, others were more pragmatic and felt that it was a sensible solution, not least because the water is already treated with chemicals. They felt that it was important that Thames Water are careful about the way they position it with customers and that using words like 'chemicals' might scare people unnecessarily.

"The water that you've got in that glass now it was with somebody else at some time or other. The chances are anyway that it has. So that's reused water anyway."(Customer workshop participant, Lechlade)

"We've just got to drink our effluent, that's what we've got to be doing. In 50 years' time that's what we'll be doing... For me this feels massively wasteful that if you treat it, and you put it in the river, and you take it out and treat it."(Customer workshop participant, Teddington)

A few participants liked this option because it seemed easier to implement – there were fewer obstacles to Thames Water getting started than for some of the other options (for example, not being reliant on other water companies or having to deal with campaigning groups).

Because this option would not be used for many years, many participants hoped or assumed that this would provide time to either look for alternative options, or at least to be able to treat the water in a less energy intensive way (for example, using more renewables).

The views of participants based in East London were largely in line with participants from other areas; the one additional point that was raised was the potential smell from the treatment works.

"It already smells in the area. Locals won't be happy when they hear about this idea."(Customer workshop participant, East London)

Aquifer storage and recovery scheme – workshop participant views

As an overall concept, participants were positive about the idea of an aquifer storage and recovery scheme and could see very few potential downsides. Participants questioned whether it was worth the effort as it seemed to provide minimal water compared to the other options, but many felt that it might as well be included as part of the overall plan.

"If we're looking to save every drop, maybe it's worth it?" (Customer workshop participant, Lechlade)

Participants liked the fact that this was a tried and tested approach that they knew would work.

"It's proven technology, there's experience doing this internationally." (Customer workshop participant, Abingdon)

They also liked that it had a low environmental footprint and that the water would be stored underground. They felt that this would be beneficial as it would take up less surface space and the water would be less likely to be contaminated.

"We like the idea of underwater storage. It's a great idea." (Customer workshop participant, Abingdon)

"I like it because it doesn't use up surface area. And also, if say there was some sort of chemical contamination of the area for chemical warfare or whatever. You would have water that wasn't on the surface that you could use." (Customer workshop participant, Lechlade)

The scheme also appealed for being relatively cheap and quick to build. Some questioned why there could not be more of these developed, and liked the idea of it being replicated in other areas.

The main criticism of this option was that it did not seem to deliver much water in comparison to the other options discussed.

"A lot of effort for not a lot of return, and a long time to wait as well." (Customer workshop participant, Lechlade)

"Makes you wonder if it's worth the expense." (Customer workshop participant, East London)

7.4. Water transfers from other water companies (Q7)

Views about water transfer were very mixed. Many online community members and workshop participants liked the idea, as they felt it was a sensible solution if other regions have an excess of water. They instinctively liked the idea of greater co-operation and partnership working between companies.

"Sounds like an excellent idea much like the National Grid for electricity but I honestly don't know quite how it would work in reality!" (Online community, household customer, CR0)

"I always believe water companies must work together to maintain healthy water supply for the whole of UK for the future as the demand will increase with the population." (Online community, other, E17)

"Wouldn't it be good if the whole country was connected and we were all sharing water with one another?" (Customer workshop participant, East London)

Some workshop participants found the idea of canals being restored to transfer the water especially appealing, particularly the Midlands option. They liked the idea of using existing networks, as well as the idea of giving to the Canals Trust and potentially benefitting the local community through the rejuvenation of the canal.

"I think it's great the idea of linking the canals – will encourage people to go out on boats." (Customer workshop participant, East London)

"I just think culturally, socially, being able to cycle down a canal path somewhere, which in my mind, these are all great things... I think part of Thames Water's job is to make our water environment attractive as well, and socially have some sort of morals about it." (Customer workshop participant, Lechlade)

Others (both online community members and workshop participants) voiced concern about the potential impact on bills, and others still about what would happen in a drought. Some also queried the potentially negative environmental impact in terms of the energy used to transport the water and the implications of taking more water from other regions.

"This (water transfer) seems a fair option as long as it doesn't put a strain on water supply in other areas and that the cost of this in terms of paying for it are reasonable." (Online community, household customer, N1)

"Would that be feasible? Although the Midlands, Wales and the North West are wetter areas, there is no guarantee that such conditions will prevail in these uncertain times of climate change. It would be invidious to supply one area with water from another if shortfall were to result in the 'richer' area." (Online community, household customer, AL7)

"In principle it sounds good but if someone decides to shut the switch off... It's like oil." (Customer workshop participant, East London)

"The drought in 1976 affected pretty much the whole country. So, it wouldn't make any difference whether you transferred from Birmingham or Wolverhampton because they'd have the same problems as we would in London." (Customer workshop participant, East London)

"You'd need really detailed studies as it seems horrendous how much it could affect species. I don't like the idea of it." (Customer workshop participant, Teddington)

Workshop participants had questions about practical matters such as the length of contracts that would be required, and what would happen if there were substantial changes in population or if a water company was sold. Overall, they were worried that this would be a risky solution in the long term.

"There's less control because there's the need to deal with another organisation." (Customer workshop participant, Teddington)

Several felt that this solution would only be acceptable if leakage was significantly reduced:

"If other water companies have an excess of water then it's good to move into areas where there's a shortage, however bring water across to a network with numerous leaks would not be acceptable." (Online community, household customer, GU2)

8. Next steps

This report has set out the range of responses received to Thames Water's consultation on its draft Water Resources Management Plan. The responses came through a range of channels and formats and totalled over 3,400.

There are many areas of consensus, but equally there are areas where opposing views have been expressed. Thames Water will consider all of the responses received and publish its required Statement of Response as required by the Department for the Environment, Food and Rural Affairs.

Community Research and Thames Water would like to thank all respondents to the consultation for their careful consideration of the issues. The company commits to further engage with consultees about any material changes to the plan before it is finalised.

Appendix A – Consultation Questions

The consultation questions have been mapped to the report sections below:

Consultation questions	Report sections
<p><i>P6 of our overview document provides information on how more severe droughts in the future could affect our customers.</i></p> <p>Q1 Our proposed plan is designed to maintain all of our customers' water supply, with no need for it to be rationed, during a severe drought (the kind that might happen once in every 200 years). We have some options about how quickly we achieve this:</p> <ul style="list-style-type: none"> • Ensure that we can maintain all of our customers' water supply during a severe drought by 2030 • Delay the work so we can maintain all of our customers' water supply by 2035. • Speed up the work so we can maintain all of our customers' water supply by 2027, the earliest we can deliver suitable options. <p>Please give us any comments on this.</p>	5.4.3, 6.1, 7.1
<p><i>Pages 8-9 of our overview document provide information on how we have worked with our customers to understand their views and preferences.</i></p> <p>Q2 Please give us your comments on our summary of our customers' views.</p> <p><i>Pages 10-13 of our overview document provide information on the options available to help manage future water supply</i></p> <p>Q3 Please give us your comments on the options we have considered.</p> <p><i>Pages 16-18 of our overview document provide information on the approach we have taken to develop our proposed water plan.</i></p> <p>Q4 Please give us your comments regarding the approach we have taken. Do you have any specific comments on:</p> <ol style="list-style-type: none"> 1) How we have reflected the priorities of our customers 2) The way we have shortlisted options 3) How we have considered environmental and social impacts 4) The alternative programmes of options we have considered 	5.1.2, 6.2 and 7.2 5.7, 5.8, 6.3, 7.3 5.9, 5.10, 6.4, 7.4
<p><i>Pages 20-22 of our overview document provide information on the proposed plan.</i></p> <p>Q5 Please give us your overall comments on our proposed plan.</p>	

<p>Q6 Please give us any specific comments on our plans to:</p> <ol style="list-style-type: none"> 1) Reduce leakage 2) Continue our household metering programme 3) Promote the efficient use of water 4) Take more water from the River Thames at Teddington Abstraction 5) Provide new water supply in the long term <p>Q7 Please give us any comments on the option to transfer water from other water companies in the Midlands, Wales or the North West.</p> <p>Q8 Please give us any other comments on our proposed water plan.</p>	<p>5.8.2, 6.6.1, 7.6.1 5.8.4, 6.6.2, 7.6.2 5.8.3, 6.6.3, 7.6.3 5.7.1, 6.6.4, 7.6.4 5.4.2-5.4.4, 5.7.4, 6.7, 7.7 6.8, 7.8</p>
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Appendix B – List of Stakeholder Organisations who responded

The following stakeholder organisations and MPs submitted a written or email response to the consultation or completed the online survey. The views of those who submitted a written or email response are summarised in Section 5 of this report. Those organisations which completed the online survey are highlighted in red. Their views are summarised in Section 6.

Action for the River Kennet
Affinity Water
Amwell Magna Fishery
Angling Trust
Banbury Ornithological Society
Bristol Water
Berks, Bucks & Oxon Wildlife Trust
Buckinghamshire County Council
Canal & River Trust
Campaign to Protect Rural England
Centre for Competition Policy (CCP) at the University of East Anglia
Cherwell District Council
Chilterns Conservation Board or Chilterns Chalk Streams Project
Chinmaya Mission UK
Civil Service Angling Society
Colne Valley Fisheries Consultative
Company of Proprietors of the Stroudwater Navigation
Consumer Challenge Group (TW)
Cotswold Canals Trust
Cotswold District Council
Cranleigh Parish Council
Dacorum Borough Council
Darent River Preservation Society
Drayton (Abingdon) Parish Council
Earl of Plymouth Estates Limited
East Hanney Parish Council
East Hendred Parish Council
Environment Agency
Gerrards Cross and Uxbridge Angling Society
GLA/Mayor of London
GMB
Groundwork South
Group Against Reservoir Development

GVA
Hampshire County Council
Hertfordshire County Council
Hillesden Trust
Historic England
Historic England (London)
Kennet Valley Fishery Association
Lea Boaters Collective
London Assembly Environment Committee
London Borough of Newham
London Chamber of Commerce and Industry
London Councils
London First
London Wildlife Trust
London Waterkeeper
MBNA Thames Clippers
National Farmers Union
Natural England
Natural Resources Wales
Ofwat
Old Windsor Angling Club
Oxford City Council
Oxfordshire County Council
Pang Valley Flood Forum
Port of London Authority
River Chess Association
River Thames Society
Royal Society for the Protection of Birds
RWE Generation UK
South East Rivers Trust
South Oxfordshire District Council
Southern Water
Stonebridge Lock Coalition
Stroud District Council
Stroud Valleys Canal Company
Swindon Borough Council
Thames Rivers Trust
Thames Valley Chamber of Commerce
Thame Valley Fisheries Preservation Consultative
The Cotswold FlyFishers
The Rt Hon Richard Benyon MP Member for Newbury and Minister for the Natural Environment and Fisheries from 2010 – 2013.

The Rt Hon Geoffrey Clifton Brown MP Member for the Cotswolds
The Rt Hon John Redwood MP Member for Wokingham
The Rt Hon Charles Walker MP Member for Broxbourne
The Swan Sanctuary
Uxbridge Rovers Angling and Conservation Society
Vale of White Horse District Council
Ver Valley Society
Wantage and Grove Campaign Group
Waterlevel Ltd
Waterwise
Wild Trout Trust
Wiltshire Council
Wokingham Borough Council
WWF
Wycombe District Council