Final Draft Water Resources Management Plan 2024

Annex 5: Stakeholder and Customer Engagement

including Consultation Feedback

May 2025

from Southern Water

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Glossary

Acronym	Term
ABSTR	Taking water from rivers and groundwater
ASR	Aquifer Storage and Recovery
ADO	Average Deployable Output
AONB	Area of Outstanding Natural Beauty
BBC	British Broadcasting Corporation
BNG	Biodiversity Net Gain
CATCH	Catchment Management
CCW	Consumer Council for Water
CPRE	Campaign to Protect Rural England (‘the Countryside Charity’)
DCO	Development Consent Order
Defra	Department for Environment, Food and Rural Affairs
DESAL	Taking water from the sea
DMA	District Metered Area
DO	Deployable Output
DROUG	Extra drought measures
DWI	Drinking Water Inspectorate
DWMP	Drainage and Wastewater Management Plan
dWRMP24	Draft Water Resources Management Plan 24
EAG	Environmental Advisory Group
EFFIC	More efficient use of water in homes
EIP	UK Government’s Environmental Improvement Plan
EIA	Environmental Impact Assessment
HRA	Habitats Regulations Assessment HRA
HWTWRP	Hampshire Water Transfer and Water Recycling Project
INTER	Transferring water from other regions
INTRA	Transferring water within the South East region
GREYW	Using grey water to rainwater collection and use
IMPRO	Improvements to the current water supply system
LEAK	Leakage detection and reduction
MAR	Managed Aquifer Recharge
METER	Universal Metering
MOSL	Market Operator of England’s Non-Household Retail Water Market
NAV	New Appointments and Variations

Acronym	Term
NEUB	Non Essential Use Ban
NPPF	National Planning Policy Framework
NFU	National Farmers Union
Ofwat	Office for Water
PCC	Per Capita Consumption (average water use per person)
PEIR	Preliminary Enivronmental Impact Report
POETS	Planning Oxfordshire's Environment and Transport Sustainably
PR24	Price Review Programme 2024
RAPID	Regulators Alliance for Progressing Infrastructure Development
rdWRMP24	Revised Draft Water Resources Management Plan 24
RECY - H	Recycling treated wastewater for household use
RECY - I	Recycling treated wastewater for industrial use
RESER	Reservoir to store water
SEA	Strategic Environmental Assessment
SESRO	South East Strategic Reservoir Option
SSSI	Site of Special Scientific Interest
SRO	Strategic Resource Option
STORE	Storing water underground
TARIFF	Using tariffs to encourage water saving
TUB	Temporary Use Bans
WAFU	Water Available for Use
WFD	Water Framework Directive
WINEP	Water Industry National Environment Programme
WISER	Water Industry Strategic Environmental Requirement
WRMP	Water Resources Management Plan
WRPG	Water Resources Planning Guidance
WRSE	Water Resources South East
WRZ	Water Resources Zone
WSCC	West Sussex County Council
WTW	Wastewater Treatment Works

1 Introduction

This annex accompanied the revised draft WRMP24 (rdWRMP24) that we publicly consulted on from 4 September to 11 December 2024. Following this consultation we have made some amendments to this annex. The annex provides a summary of the key customer insight that has been used in development of our Water Resources Management Plan 2024 (WRMP24). This document summarises insight from five main areas of engagement:

- Feedback from customers and stakeholders on the draft Regional Plan (2022) by Water Resources South East (WRSE)
- Foundational insight on customer preferences (2020-21)
- Feedback on our draft Drought Plan (2021)
- Feedback on our draft WRMP24 (dWRMP24) (2023)
- Feedback on our revised draft WRMP24 (rdWRMP24) (2024)

This annex also provides a summary of the pre-consultation work we undertook for the WRMP24 for the purpose of understanding customer priorities and the priorities of the people stakeholders represent, sharing best practice and identifying possible collaborative opportunities.

2 Customer Insight

Insight and engagement from a range of sources has helped in the development of our WRMP24. In total, we have engaged with over 3,000 customers and stakeholders, with a particular emphasis on the use of deliberative approaches to ensure high quality research[1]. We have engaged with households, businesses, stakeholders, future customers and harder to reach audiences in order to hear to a wide range of customers' views.

On initial discussion, customers are often surprised at future challenges of water scarcity. Water tends to be viewed as an abundant resource. With limited experience of shortages, the general perception is that it is 'always raining' and we live on an island surrounded by water. Upon further exploration, customers understand the challenges of population growth, climate change, environmental protection and support action be taken to ensure a resilient water future the South East.

Customers want us to make use of what water is already there and therefore they want to see demand measures to reduce leakage and increase water efficiency. However, they also want to see supply-side solutions that help address the root cause of water scarcity for future generations and want the risk of emergency drought restrictions reduced.

Through all our engagement, there is a high level of priority placed on environmental protection. Therefore, the focus on reducing abstraction is welcomed, although customers are looking for more detail on how this will be achieved.

There is also a high level of support for a collaborative approach to long-term planning for water resources and resilience to droughts and other unexpected events. Customers support the sharing of resources, although they would like to know what would happen without these resources, as well as local level impacts to help them decide whether specific strategic resource options are the right choice for them. They support an adaptive planning approach that looks at the different supply-demand balance scenarios and pathways.

Customers welcome the balance the Regional Plan strikes between demand and supply-side options, although they feel that there is an overly heavy reliance on demand management in the earlier years of the plan and are concerned about that. Overall, customers welcomed the balance of new supply options in the emerging Regional Plan. The two supply-side option types that receive a more mixed response are desalination and water transfers from other regions. There is some support for such schemes, but the support is heavily qualified by the need to mitigate some key concerns, especially on cost and environmental impact.

Overall, there was a general consensus that an acceptable plan:

- Will protect the environment
- Will have a strong focus on education and demand management
- Will increase the level of resilience by continuing to drive down the level of risk of emergency drought measures and incentivise companies to minimise waste

[1] Engaging water customers for better consumer and business outcomes | CCW (ccwater.org.uk)

2.1 Objectives

The main objective was to deliver high quality insight for a WRMP24 that identifies solutions that best meet our customers' needs, now and in the future. This is further elaborated on in Table 2.1.

Table 2.1: Main areas of insight and key objectives.

Area of Insight	Objective
Feedback from customers and stakeholders on the draft regional water resources plan (2022)	To understand key feedback on the Regional Plan, areas of support and challenge for the Southern Water schemes.
Foundational insight on customer preferences (2020-21)	To have a solid understanding of customer preferences on demand and supply solutions.
Feedback on the draft Drought Plan (2021)	To have greater understanding of customer support or challenge during drought conditions.

2.2 Approach and methodology

We launched our Customer Participation Strategy in September 2019. It included ongoing engagement with customers and stakeholders on the services we provide, our planning for the future and the ways to best meet their needs. Our approach is centred around 12 principles to ensure meaningful participation from our customers and high-quality customer insight (Figure 2.1).

Figure 2.1: Customer participation principles.

In the development of our WRMP24, we have used insight from our ongoing programme of engagement as well as bespoke activity to support key areas. These include: the use of deliberative research with informed customers through our consumer groups (e.g. Water Futures Programme); the use of less informed customers to bring in fresh perspectives; and partnering with other water companies to engage a wider group of customers on common issues, to allow for a robust cross-regional view. The range of customers we engaged with include households, future customers, businesses, stakeholders and consumers from across the South East. They were selected to represent the demographics and locations across our region. In total just over 3,000 consumers and stakeholders have been engaged through this process. The projects included are shown in Table 2.2.

Table 2.2: Supporting insight projects and their approaches.

	Project / Programme	Project Overview	Approach and sample	Output
Feedback from customers and stakeholders on the draft regional water resources plan (2022)	Water Futures 2050	Online panel of future customers who come together every few months to tap in and review elements of our long-term strategy, focusing on that future view.	1-week online community with 23 participants being introduced to the Regional Plan and giving their views. Followed by a 90 minute Youth Committee session to validate the findings. This includes super future customers (14-15 year olds still in education), future customers (16-21 years old) and first time customers (22-30 year olds) spread across our region.	WRSE Full Report – Water Futures 2050
	Water Futures 2030	Online panel of household customers which runs alongside our Price Review 2024 (PR24) programme and allows for regular engagement.	Exploration of the Regional Plan undertaken by over 40 panellists as part of our online community. These customers are from across the region to reflect the diverse region we operate in.	WRSE Full Report – Water Futures 2030
	Water Futures Business	We used an existing network of businesses from across our region to understand views and feedback on the Regional Plan, including businesses reliant and non-reliant on water.	This exercise consisted of a 1-week online community and 16 deep-dive interviews of 45-minute duration to gather reflections on specific parts of the Regional Plan.	WRSE Full Report – Water Futures Business
	Water Futures Stakeholder	Specific groups set up to have detailed discussion around the Regional Plan. Southern Water hosted four 'Expert Insight' panels, designed to gather feedback from its key stakeholders on the emerging Regional Plan focusing on stakeholders from across our four areas (Sussex, Hampshire, Isle of Wight and Kent)	4 Expert Insight panels of 2-hour duration with stakeholders (Consumer Council for Water, Rivers Trust, Natural England, Environment Agency, etc) from each of our areas focused on understanding the impact and views of expert stakeholders embedded within the local community who can give holistic feedback from their areas of expertise.	WRSE Full Report – Water Futures Stakeholder
Foundational insight on customer preferences (2020-21)	Water Resource Preferences – Qualitative Phase	Following a review of over 120 documents, the research sought to explore a range of areas relevant for choices of resource options. These included the perceived benefits, barriers, preferences and impacts for each. Focus was placed on assessing the preferences of supply- and demand-side solutions as well as key issues for the environment and resilience.	Approximately 80 customers participated in the research, with separate groups of 7-10 customers for each company. Discussions took place online from August 2020 to January 2021, featuring two sessions with participants, with a mix of discussion topics and exercises. The groups also completed pre-read and between session 'homework' exercises. The research explored a range of issues within the topic areas to test customers' broad priorities and help establish a view on the level of customer support for various outcomes.	WRSE Customer Preferences Deliberative Research February 2021
	Water Resource Preferences – Quantitative Phase	A project to engage across the South-East region to get a robust view on customer preferences around demand- and supply-side options for resource planning. The survey was conducted to provide representative results across households and non-households connected to the public water supply in South-East England.	A total of 2,295 household and 365 non-household customers completed the online survey. The survey was developed from two stages of qualitative testing: (a) learnings and findings from the deliberative research, and (b) iterative testing through 10 one-to-one cognitive interviews. The survey material was piloted (with 52 customers) and then implemented via a soft launch to test the choice task on customer preferences for demand and supply options.	WRSE Customer Preferences Quantitative Research March 2021

	Project / Programme	Project Overview	Approach and sample	Output
Feedback on the draft Drought Plan (2021)	Drought Plan groups	Specific groups set up to have detailed discussion around the Drought Plan which was provided to participants in advance. We gauged feedback on the plan, comprehension of the plan, as well as support for the principles and their views on how we communicate.	4 focus groups of 2-hour duration. 2 groups of household customers who have been part of our Water for Life Hampshire panel, 1 additional group of Water Futures 2030 panel who are household customers from across Hampshire, Sussex and Kent. 1 group of 8 Portsmouth Water customers.	Household Customer Engagement – Drought Plan 2021
	Water Futures 2030 and Water for Life Hampshire	Deliberative consumer panel which is central to all our insight for strategic planning and PR24 programme through continuous engagement.	Exploration of the Drought Plan undertaken by 63 panellists as part of our deliberative consumer panels. These customers reflect the diverse region we operate in. This was followed up by 5 discussions of 1-hour duration each to review the findings.	Household Customer Engagement – Drought Plan 2021
	Water Futures 2050	Our young persons' group of future customers who focus on providing insight for our long-term strategy and ensuring customers of tomorrow have their voices heard in our strategic planning.	1 week online community with 46 participants being introduced to the Drought Plan (10 Portsmouth Water customers). This includes super future customers (14-15 year olds still in education), future customers (16-21 years old) and first time customers (22-30 year olds) spread across our region. This was followed by 6 focus groups in 75-minute duration sessions to review the plans in more detail.	Future Customers and Drought overview 2021
	Non-Household Consultation	We used an existing network of businesses across our and Portsmouth Water regions to engage these customers on the proposed Drought Plan.	25 interviews of 1-hour duration each with business customers (including customers who are reliant as well as those who are non-reliant on water for their product/service). This included 8 businesses from the Portsmouth Water operating area.	Business Customer report – Drought Plan 2021
	Expert Stakeholders interviews	Engagement of expert stakeholders, which allowed us to have a broader view of the needs of our customers from different backgrounds and cultures during drought conditions.	6 interviews of 1-hour duration with 'harder to reach' customers, including both Southern Water and Portsmouth Water customers (including signposting services, housing services, language assistance and supported living representatives).	Expert stakeholder report – Drought Plan 2021
Additional Insight Sources	Water Recycling Semiotics	To understand cultural, social and perceptual barriers to the acceptance of recycled water and identifying ways to overcome them. Semiotics is the analysis, deconstruction and exploration of meaning all around Southern Water by using expert interviews and data analysis.	10 Southern Water and partner technical experts. 5 cultural experts. Analysed over 400,000 data points from sources such as media, publications, entertainment, industry websites etc.	Southern Water Semiotics of Water Report Nov 2020

2.3 Customer perceptions of water scarcity

Most customers are surprised to learn that the South East is under water stress. Drought is normally associated with images of arid landscape, deserts or countries that feel very distant, both culturally and geographically, to the UK. As such, the need to prepare for '1-in-200 year' or '1-in-500' year drought is not widely understood.

Water is simultaneously valued and taken for granted. On reflection, customers understand the vital role it plays in our lives, but over time this has become invisible. The constant availability of high-quality water

contributes to the perception of an abundance of water. 'We're an island', 'it's always raining', 'Blue Planet', 'extreme storms' and other cultural cues are continually reinforcing the perception of abundance. In 2018, we had the hottest summer since 1976, and in 2020 saw a number of heatwave periods without any significant water restrictions to customers. This continues to reinforce the belief of abundance.

Water is seen as either 'good' or 'bad'. It is good when it is part of the natural or human world, such as in rivers, reservoirs, for use in healing and vitality. It is bad when it is part of the destructive or processed world, such as storms, flooding, pollutions or full of chemicals. Demand management solutions (such as reduction in leakage and per capita consumption (PCC)) and supply solutions such as reservoirs and natural groundwater sit firmly in perceptions of 'good' water and are customers' first choice for water sources.

For any solution to succeed, we need to engage with customers and stakeholders clearly and effectively on the need for the solution in order to help customers understand the impacts of climate change and population growth on existing water resources and the need to protect the environment.

2.4 Feedback from customers and stakeholders on the draft Regional Plan (2022)

Towards the end of 2021 and throughout 2022, we conducted a research project through our business-as-usual engagement channels, to understand views from different audiences on the draft Regional Plan developed by WRSE. A formal consultation on the draft regional plan ran from 14 November 2022 to 20 February 2023.

Using our Water Futures Programme, we were able to engage with household and future customers (including those who are harder to reach and from diverse backgrounds), as well as non-household customers and stakeholders from across our operating area. Table 2.3 shows the range of approaches employed to ensure the views of these audiences were incorporated in the proposed plans for the region. In this section, we have summarised the key findings from our deliberative research to help understand customer and stakeholder views, differences, and concerns on the draft Regional Plan.

Table 2.3: Supporting insight projects for the draft Regional Plan and their approaches.

Project / Programme	Project Overview	Approach and sample	Output
Water Futures 2050	Online panel of future customers who come together every few months to tap in and review elements of our long term strategy – focusing on that future view.	1-week online engagement with 23 participants on the Regional Plan, followed by a 90-minute Youth Committee session to validate the findings. This includes super future customers (14-15 year olds still in education), future customers (16-21 years old) and first time customers (22-30 year olds) spread across our region.	WRSE Full Report – Water Futures 2050
Water Futures 2030	Online panel of household customers which runs alongside our PR24 programme and allows for regular engagement.	Exploration of the Regional Plan by over 40 panellists as part of our online community. These customers reflect the diverse region we operate within.	WRSE Full Report – Water Futures 2030
Water Futures Business	We used an existing network of businesses from across our region to understand views and feedback on the Regional Plan, including businesses who are reliant as well as those non-reliant on water.	This exercise consisted of a 1-week online community and 16 deep-dive interviews of 45-minute duration each to gather views on specific parts of the Regional Plan.	WRSE Full Report – Water Futures Business
Water Futures Stakeholder	Specific groups set up to have detailed discussion around the Regional Plan. Southern Water hosted four 'Expert Insight' panels', to get feedback from its key stakeholders on the emerging Regional Plan focusing on stakeholders from across the region (Sussex, Hampshire, Isle of Wight and Kent)	4 Expert Insight panels of 2-hour duration with stakeholders (Consumer Council for Water, Rivers Trust, Natural England, Environment Agency, etc). from across the region. The sessions were focused on understanding the impact and views of expert stakeholders who are embedded within the local community and can give holistic feedback from their areas of expertise.	WRSE Full Report – Water Futures Stakeholder

2.4.1 Summary of findings[2]

There was concern at the extent of the potential scarcity, although customers are reassured that water companies are working effectively together on this. Customers welcome a focus on reducing abstraction but require more detail on how this will actually be achieved.

There was no clear overall preference among stakeholders on catchments that we should prioritise for abstraction reduction:

Some stakeholders believed that it was more important to prioritise fragile areas, such as upper catchments, for various initiatives as they like the trickle-down benefit to the wider catchment. They also prefer this approach as it means that the 'most vulnerable' headwater ecologies are addressed. Having a high degree of certainty about restoring flows and delivering environmental improvement is seen by some customers as a key priority over focusing on a wider range of catchments and only partially addressing abstraction issues. They have generally prioritised nature over humans by placing less emphasis on the catchments where people have most unrestricted access, as this does not necessarily equate to most overall benefit.

Other customers, however, thought that prioritising the catchment area with the biggest environmental benefit would be the most sensible approach.

Future customers were also positive about the plans to reduce abstraction but need more information to address concerns about the time it would take. As was the case with non-household customers, future customers were also surprised by the need to reduce abstraction. The need was, however, not challenged.

Business customers were positive about the proposed environmental benefits but require greater reassurance from WRSE about the impact on their businesses in terms of cost, disruption from unreliable supply, and having to comply with any new policies.

Future supplies (2025-2040) – Customer support the focus on demand levers, although are concerned that there is a huge emphasis on them to:

a. *reduce their consumption, and*
b. *meet the costs via bill increases, which feels like an over heavy reliance on demand management (54%)*

Future supplies (2040-2060) – Customers welcome that with time the balance begins to shift more towards supply than demand, and that different pathways are being considered.

Customers want to see an increase in emphasis on water recycling, though some would also like to see more focus on storage. Reducing water efficiency to 26% (2040-60) from 54% (2025-40) feels more realistic and less of a burden on customers, but making up the shortfall with transfers from other regions runs the risk of being unsustainable e.g. during drought periods. However, the lower and central adaptation pathways increase water efficiency and leakage reduction from the 2025-40 figure.

Young people also supported the WRSE Regional Plan for 2025-40 and 2040-60 overall, seeing the plan as thorough and achievable. They felt confident that the plan would address water scarcity issues in the South East and lead to secure water supplies in the future. However, some needed more information before they could feel confident that the plan would ensure the environment was protected or that the plan is cost effective. These feelings were, for the most part, replicated across the region. The overall view is that the plan has struck the right balance between demand and supply solutions, and the risks associated with

[2] WRSE Full Report - Water Futures 2050, WRSE Full Report - Water Futures 2030, WRSE Full Report - Water Futures Business and WRSE Full Report - Water Futures Stakeholder

delivering these solutions. However, stakeholders in Sussex, Kent and Hampshire stressed that Southern Water should not rely solely on demand management at the expense of investing in the network.

Businesses were also positive about the WRSE Regional Plan for 2025-40 and 2040-60. The range of solutions proposed were seen to comprehensively address the predicted water shortfall and planning separately for each of the adaptive pathways was considered sensible. Non-household customers only engaged with the plans to a limited extent. This may be because they were sufficiently reassured by the plans.

Encouraged by and genuinely interested in government interventions to reduce demand, but very critical of the long timelines for implementation.

There is almost universal acceptance that Temporary Use Bans (TUBs) and Non-Essential Use Bans (NEUBs) are necessary, although not preferred. Additionally, they are seen as a good way of targeting wasteful behaviour and high users of water. Applying TUBs/NEUBs to both household and non-household customers is supported. Some question their effectiveness though, given difficulties in policing them. Some also question why these are built into the plan rather than being options of last resort. In their view, building these into the plan normalises them. There is strong support for water companies being more ambitious in reducing leakage.

Positive response to the balance of new supply options in the emerging plan.

- Aquifer Storage and Recovery is particularly welcomed as being innovative and making a positive environmental difference.
- Water recycling feels like a big part of the emerging plan and feels intuitively sustainable and environmentally friendly; though some are keen to reiterate the need to provide the necessary assurances on water quality.
- Building new reservoirs is also seen as a positive part of the plan, with the associated environmental, health and community benefits.
- There is a desire for Southern Water to ensure that the more environmentally friendly and cost-effective measures are a primary focus so that bills remain as affordable as possible.
- There was a feeling amongst stakeholders that all the proposed solutions have a role to play, but it was suggested that more monitoring and analysis would be needed to ensure that no environmental damage is caused, and that the proposed solutions are the most cost-effective ones. Water collection systems and catchment management were the most popular options across the four regions.
- Businesses fundamentally trusted that the experts at WRSE knew what they were doing when making the plan. They are happy with limited information being provided.

The two measures that receive a more mixed response are desalination and water transfers from other regions.

Desalination tends to polarise customers' opinion, with some seeing huge potential in coastal areas of our region but others put off by cost and risk of environmental impact. Transfers from other regions are generally not seen as sustainable or self-reliant solutions, and as being risky in terms of continuity of supply during droughts and potential high cost.

Desalination was generally negatively received by the stakeholders, with concerns about its carbon intensive nature and its by-products.

Evaluation of the transfers in the emerging plan reveals some support but heavily qualified by need to mitigate some key concerns especially on cost and environmental impact.

Water transfers were broadly viewed as a fallback option by stakeholders, due to the costs of infrastructure and concerns about wider national water resilience. There was noticeably more support for water transfers in Kent and Hampshire.

Catchment solutions were seen as positive for the environment, showing good will on the part of water companies, but need to consider balance between what is innovative vs experimental.

There is wide acknowledgement that these schemes may only produce a small amount of water and that they do 'not form part of our cost-efficient solution', which somewhat undermines much of the overall good associated with them.

Young people want to see Southern Water investing in more environmentally sustainable infrastructure and doing this earlier rather than later. Ultimately, they felt that Southern Water should pay for this investment from their own profits, as it was both their responsibility to do so and would ensure the longevity of their business (and water supply) in the future. However, they were prepared to pay higher bills to cover this investment if needed, as long as bills remained affordable.

For businesses, the thorough nature and range of solutions proposed, along with the inherent trust that they had in the expertise behind the plan, was sufficient to reassure them that the risk of potential disruption to their water supply would be minimal. However, they require more information about the cost implications for them and their businesses so they can accurately forecast their finances.

2.5 Customer quotes on the Regional Plan

‘It really put into perspective how much water is consumed. I would never have thought that 145 litres per person were consumed daily. It’s quite staggering to realise how much we take access to water for granted.’

Future customer

‘I agree that upper catchments would have an effect on catchment areas as a whole, therefore it is important to reduce abstraction in these areas to minimise negative consequences.’

Future customer

‘It makes sense to use water efficiently and not waste it, to be able to supply water to areas that need it, and to protect the environment. I don’t know what other priorities they would have.’

Business Owner

‘I would like some more detail; how much is based on population growth, usage, industry? Not specific figures, but a little breakdown of the estimate a bit more.’

Business Owner

‘Southern Water has been successful in protecting the environment while supporting population growth. I also applaud efforts to reduce abstraction, while putting in place leakage and demand reduction systems, and this needs to continue.’

Kent Stakeholder

‘Government and Ofwat regulations are not fit for purpose for addressing these challenges. Rather than allowing you to invest to support these huge transformations to the system, you are expected to cut your margins, meaning this whole thing is doomed to fail.’

Hampshire Stakeholder

‘The environment has to be one of the key drivers in any decision…we need to protect for the future generations both on a nature level and a resource level. The cost is a bit eye watering when you look at the figures though.’

Household Customer

‘It’s a clearly laid out plan but the reliance on demand management is a little bit worrying and I’d say a risk especially as this relies on helping consumers minimise their water use.’

Household Customer

2.6 Foundational insight on customer preferences (2020-21)

Through 2020 and 2021 the six WRSE companies (Affinity Water, Portsmouth Water, South East Water, Southern Water, SES Water and Thames Water) collaborated with four other companies (Anglian Water, Severn Trent Water, South West Water, United Utilities) on a research project on customer preferences.

The first stage was an evidence review which compiled a range of insights from companies’ PR19 and WRMP19 customer research. The review included over 120 documents submitted by the ten companies. The purpose was to provide a consolidated view of the evidence base structured around a set of research questions related to: (i) resilience outcomes; (ii) demand measures; (iii) supply side solutions; and (iv) the wider policy context for long-term water resource planning. This review included the research Southern

Water had carried out to that date, including relevant reports for PR19, WRMP19 and ongoing work for the Water for Life Hampshire programme.

Key findings from this collaborative research are summarised in Table 2.4.

Table 2.4: Supporting insight projects on customer preferences.

Project / Programme	Project Overview	Approach and sample	Output
Water Resource Preferences – Qualitative Phase	Following a review of over 120 documents, the research sought to explore a range of areas relevant for choices of resource options. These included the perceived benefits, barriers, preferences and impacts for each. Focus was placed on assessing the preferences of supply- and demand-side solutions as well as key issues for the environment and resilience.	Approximately 80 customers participated in the research, with separate groups of 7-10 customers for each company. Discussions took place online from August 2020 to January 2021, featuring two sessions with participants, with a mix of discussion topics and exercises. The groups also completed pre-read and between session 'homework' exercises. The research explored a range of issues within the topic areas to test customers' broad priorities and help establish a view on the level of customer support for various outcomes.	WRSE Customer Preferences Deliberative Research February 2021
Water Resource Preferences – Quantitative Phase	A project to engage across the South-East region to get a robust view on customer preferences around demand- and supply-side options for resource planning. The survey was conducted to provide representative results across households and non-households connected to the public water supply in South-East England.	A total of 2,295 household and 365 non-household customers completed the online survey. The survey was developed from two stages of qualitative testing: (a) learnings and findings from the deliberative research, and (b) iterative testing through 10 one-to-one cognitive interviews. The survey material was piloted (with 52 customers) and then implemented via a soft launch to test the choice task on customer preferences for demand and supply options.	WRSE Customer Preferences Quantitative Research March 2021

2.6.1 Summary of findings[3]

- Overall, our research has shown the high level of priority that participants placed on environmental protection.
- There is also a high level of support for a collaborative approach to long-term planning for water resources and resilience to drought and unexpected events. Participants had a good and increasing awareness of climate and population pressures and are reassured that companies are planning for future risks.
- There is support amongst participants for reducing the risk of emergency drought restrictions. The experiences of people through 2020 and COVID-19 has made the implications of restrictions on day-to-day activities less abstract and a better reference point for gauging impacts that are tolerable and those that are to be avoided.
- Participants also supported the sharing of resources but require more detail on the strategic context (availability of water by location), the impact that absence of these resources will have as well as local level impacts to help customers decide whether specific strategic resource options are the right choice for them.

[3] WRSE Customer Preferences Deliberative Research February 2021

- Determining whether a plan across multiple companies is acceptable may be challenging, given expectations of customers that a good level of support will need to be evident for all companies (including 'supplier' and 'recipient' areas).

2.7 Overview of supply-demand options preferences[4]

The customer preference results show a clear priority order for solutions (
Figure 2.2). Firstly, customers want us to ensure that the current system is efficient. In practice, this mean reducing leaks and removing constraints in the water supply network. The second priority is being more efficient with the water that is currently supplied and helping customers use less water, along with actions that deliver wider benefits and public value, such as catchment management initiatives. This is followed by development of new resource schemes and inter-/intra-regional transfer options. The least preferred options are the ones that have potentially significant negative environmental impacts, including greater reliance on drought permits and orders.
This priority order was largely consistent across the different groups of customers and segments. However, potentially vulnerable customers with high dependency on water due to their particular circumstances were more likely to prefer new supply options over measures that have the potential to impact on their water use.

The sections below summarise customer views on key topics.[5]

2.7.1 Key findings – environment

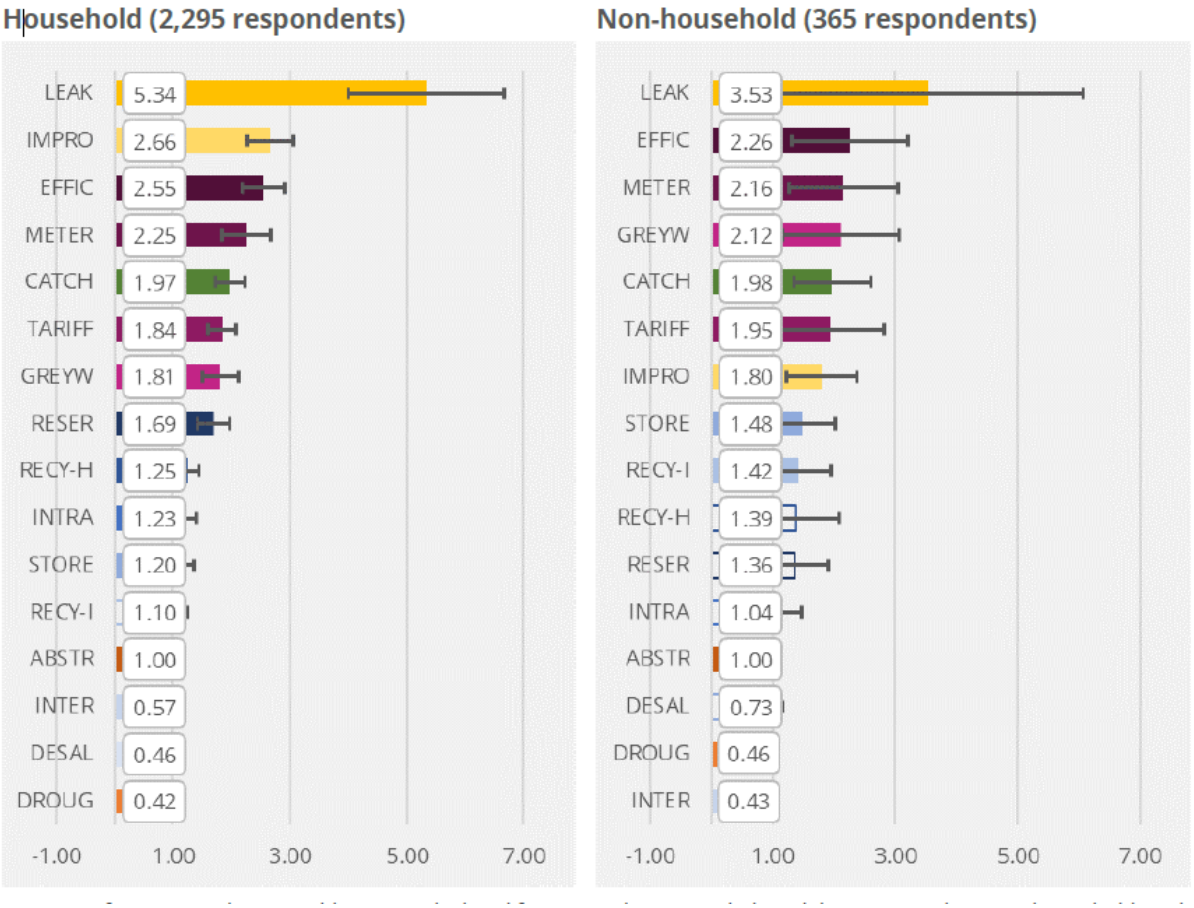
One of the biggest messages that came from the deliberative research was the importance that participants placed on the environment. The overall view was that water companies should not harm the environment. 'In this day and age' it was deemed unacceptable that long term plans to secure water supplies and improve resilience of the water system to drought and unexpected events would be at the expense of the environment. In addition, participants also wanted companies to ensure plans are sustainable.

In all groups, concern for the environment was the number one driver for views and this was consistent across all demographics. Service levels are important, but there was the view that they are at a high level and not a priority over protecting the environment. Accordingly, in voting exercises the environment tended to be the top priority.

2.7.2 Key findings – resilience

There was a great deal of support for companies working together to build resilience across regions. Most participants felt this was efficient and fair, especially as water is seen as belonging to everyone. However, the support shown for collaborative working was accompanied by a strong message from participants that all companies have a duty to 'get their house in order' and working together is not a reason to avoid using available water resources sustainably and responsibly.

[4] WRSE Customer Preferences Quantitative Research March 2021
[5] WRSE Customer Preferences Deliberative Research February 2021



Customer preference – options

Theme	
Efficiency	• Leakage detection and reduction (LEAK) • Improvements to the current water supply system (IMPRO)
Demand	• Universal metering (METER) • Using tariffs to encourage water saving (TARIFF) • More efficient use of water in homes (EFFIC) • Using grey water to rainwater collection and use (GREYW)
Environment	• Catchment management (CATCH) • Extra drought measures (DROUG) • Taking water from rivers and groundwater (ABSTR)
Resources and transfers	• Reservoir to store water (RESER) • Storing water underground (STORE) • Taking water from the sea (DESAL) • Recycling treated wastewater for household use (RECY – H) • Recycling treated wastewater for industrial use (RECY – I) • Transferring water from other regions (INTER) • Transferring water within the South East region (INTRA)

Figure 2.2: Customer preferences for water resource options.

Participants felt it was sensible to plan for a range of futures. For example, people could not have envisaged a year like 2020 with record temperatures in spring/early summer alongside a pandemic, but recognised that whatever resilience plans are in place worked and there was no interruption to supply. There was also recognition that the COVID-19 lockdown has increased confidence around the general public's ability to cope with certain lifestyle restrictions, including some aspects of rota cuts, such as shutting non-essential shops and schools.

Most participants felt that weather patterns are becoming more extreme. There was also a good level of understanding around population growth and the need to carefully manage water resources in the South East in view of these pressures. The participants agreed that we cannot accurately predict the future. They therefore wanted us to plan for a range of scenarios, including ones that currently appear less probable.

There were no concerns about being overly prepared for future risks and overbuilding infrastructure was not seen as an issue. The view among participants tended to be that it was 'better to be safe than sorry'. Many felt that 'we will use the infrastructure eventually'. Participants across the groups felt that WRSE's resilience planning metrics (that measure certainty, likelihood of restrictions, impact on the environment and flexibility) are considering and balancing the right things, with certainty being their highest priority.

2.7.3 Key findings – service levels

TUBs and NEUBs were not seen as significant concerns. The view was that they do not occur very often and had limited impact for most customers. Most participants felt they were not a priority for improving future service levels, although there was also no appetite for an increase in the frequency of these restrictions, either.

In contrast, severe drought restrictions (rota cuts or standpipe supply) were considered to be extremely serious by participants. Restrictions on day-to-day life due to COVID-19 have given participants a clearer understanding of what impacts are tolerable, and which are not, particularly in terms of essential services. There was a good level of support for continuing to reduce the risk of severe restrictions from the industry standard of 1-in-200 year drought severity.

A voting exercise showed that, whilst some were comfortable with the current level of risk, the majority would prefer to see a further reduction in risk. There were mixed views, though, as to how far the reduction in risk should go beyond a 1-in-200 year drought event.

Participants felt very strongly that reductions in risk of emergency drought measures need to be achieved via sustainable investment and environmental protection. Only in the most extreme situations would protecting the environment be a lower priority than people i.e. it would be more important to get water to homes than leave it in already stressed rivers. However, as noted previously, participants did not want long-term plans to deliver security of supply under normal circumstances at the expense of the environment.

2.7.4 Key findings – supply and demand options

Participants favoured demand options over supply options. In principle, it is better to use less and waste less water than develop new resources or increase the use of current resources. However, some participants were concerned about the reliability and certainty of water savings from demand options; in particular, the extent to which people will be willing or find it practical to change their behaviour, especially when water is needed the most (i.e. during a drought).

Therefore, the general sense in the groups was that water companies need to be pragmatic and assess whether demand management is enough on its own, or whether a combination of demand and supply measures is more realistic. Participants' view was that demand measures need to be in place, but that new supply options would also be needed to provide resilience.

Participants also felt very strongly that companies should have their 'house in order' by ensuring that leakage levels are appropriate, and the right levels of metering and water efficiency support measures are in place. These measures – along with other actions by Government and manufacturers – were seen as very important if companies are to encourage customers to reduce their usage and/or share resources.

Overall, reservoirs, managing land-use and catchment management were the most popular supply options across the groups, as they were considered 'more natural'. For the most part, this was due to their familiarity and certainty, and because of the potential for wider wildlife, recreation and amenity benefits. Participants were open to using new technologies, such as water recycling and desalination, but were sensitive to cost as

well as the potential environmental impacts in terms of energy, use of chemicals and waste production. Participants were accepting of local transfers and, whilst receptive to larger scale water transfers, they felt that such transfers should only be used if absolutely necessary. They did not support delivering water by road tankers, seeing it as unsustainable and a short-term emergency response only.

2.7.5 Key findings – sharing resources and associated policy issues

Sharing resources

Overall, participants were supportive of sharing water resources. They feel that water 'comes from the sky and belongs to everyone'. There are, however, limits to their support particularly from the 'supplier' point of view, with participants more willing to see water transfers out of their region when there is a lower potential impact on themselves (e.g. in terms of water quality), and less willing if the 'recipients' (companies and customers) have higher wastage.

Policy issues

Participants largely supported the three national policy issues associated with water resources, though their support was caveated. They considered the proposed target to reduce leakage by half to be reasonable; and supported the use of green energy, but only if at a reasonable cost. Whilst they all agreed that reducing water usage was positive, there were mixed views as to whether the target of a 20% reduction across households overall was fair or realistic without fundamental changes to the way we use water. Participants were also supportive of investing now for future generations but expected affordability to be taken into account.

What is an acceptable plan?

Overall, there was a general consensus that an acceptable plan will protect the environment, have a strong focus on education and demand management, increase the level of resilience, continue to drive down the risk of emergency drought measures, and incentivise companies to minimise waste.

What level of support does a plan need to have?

Participants recognised the complexities of agreeing a Regional Plan. The most popular view across the groups was that most customers in each of the companies need to agree to the plan. The views of customers of 'supplier' companies were considered especially important. Therefore, there is the need to see the level of customer support for sharing water across each company and not just the total aggregate 'result'. Participants considered that the required majority in each company should not be overly high, as they did not want to set an impossible task. However, the process needs to include protections for financially vulnerable customers who may be less likely to find a plan acceptable on cost grounds. Around 70% support was suggested in one group as a suitable threshold for customer acceptability and this was also appealing when tested in further groups.

Demand

Although participants were supportive of demand measures, it was also evident that they recognised their limitations, as they can be hard to implement and difficult to sustain. It was noted that water companies cannot force people to save water. While demand-side options may be preferable, participants' preference for them was tempered by the expectation that they would only be effective with a proportion of the customer base and that the measures could only provide a limited benefit.

Participants felt that water companies must play their part through leakage reduction but recognised some of the issues in addressing leakage.

Education

Customers considered education an essential first step to reducing water usage.

Although most participants were conscious of the environment, they were concerned that people 'take water for granted'. Many argued that we need to view water as a more precious resource, and education is the first step towards that. Some participants took the conversation a step further by recognising the need for financial incentives to ensure educational measures are effective.

The challenge of changing behaviour

Participants recognised that demand measures may have limited effect.

Although education and demand-reducing measures were favoured, there were concerns about people being reluctant to change their behaviour, and an unfair weight of responsibility falling on a minority who were keen on reducing their water usage.

Views on the efficacy of demand measures are shaped by wider experience.

The discussion around demand measures and the reliance on behaviour change is one area where the wider COVID-19 context was seen to influence participants' thinking. Specifically, some felt that responses to COVID-19 restrictions had shown that the public cannot always be relied on to change their behaviour. This led them to question the wisdom of depending on behaviour change to save water. Given this and forecast population growth, demand management alone was not considered a reliable enough measure. However, other participants felt encouraged by the more conscientious behaviour some people displayed during the pandemic.

The role for demand measures

Customers see demand measures as one component of a rounded approach.

In general, the view tended to be that water companies should follow a holistic approach and should not have an over-reliance on demand-reduction measures. An overall plan should be formed around educating customers, encouraging metering and use of water-saving devices, along with supply options. Some participants also noted that industry and agriculture also have a role to play.

Grey water measures

Lack of familiarity is a barrier to participant support to grey water measures.

In general, there was a preference for measures that participants were familiar with; whether that was through experience, education or television and other media. Some participants found grey water recycling confusing and it initially had lower levels of support. Following discussions, participants responded well to the idea of grey water reuse, but they needed more information to understand how it would be implemented (e.g. in new builds, in businesses or in older homes). Respondents suggested that government support in installing grey water devices in homes would improve public view of the measure.

Supply

Overall, the discussion in the deliberative groups indicated that participants preferred supply options that were seen as reliable, produced large amounts of water and were lower cost. Participants also tended to prefer options that they considered to be 'more natural' and seen to enhance the environment. A further distinguishing feature was the potential for, and scale of, any negative environmental impact such as chemicals and energy usage.

2.8 Feedback on the draft Drought Plan (2022)

Through our existing insight programmes, we were able to gather the views of customers who were well-informed and had good knowledge of the industry and our practices, as well as the views of existing

customers who were less informed but could provide a fresh perspective. This was achieved through our existing Water Futures 2030 panel. We also used our youth panel to gauge reactions to the Drought Plan from a young people's viewpoint (Water Futures 2050). Both of these panels consisted of an online community of participants managed by one of our partnered research agencies (Table 2.5).

Table 2.5: Supporting insight projects on the Draft Drought Plan and the approaches.

Project / Programme	Project Overview	Approach and sample	Output
Drought Plan groups	Specific groups set up to have detailed discussion around the Drought Plan which was provided to participants in advance. We gauged feedback on the plans, comprehension of the plans, as well as support for the principles and their views on how we communicate.	4 focus groups of 2-hour duration each group focus groups. 2 groups of household customers who have been part of our Water for Life Hampshire panel. 1 additional group of Water Futures 2030 panellist who are household customers from across Hampshire, Sussex and Kent. 1 group of 8 Portsmouth Water customers.	Household Customer Engagement – Drought Plan 2021
Water Futures 2030 and Water for Life Hampshire	Deliberative consumer panel which is central to all our insight for strategic planning and PR-24 programme through continuous engagement.	Exploration of the Drought Plan undertaken by 63 panellists as part of our deliberative consumer panels. These customers are from across the region and reflect the diverse region we operate within. This was followed up by 5 panel discussions of 1-hour duration to review the findings.	Household Customer Engagement – Drought Plan 2021
Water Futures 2050	Our young persons' group of future customers who focus on providing insight for our long-term strategy – and ensuring customers of tomorrow have their views represented in our strategic planning.	1-week online community with 46 participants being introduced to the Drought Plan, including 10 Portsmouth Water customers. This included super future customers (14–15-year-olds still in education), future customers (16-21 years old) and first-time customers (22–30-year-olds) spread across our region. This was followed by 6 focus groups of 75-minute duration each reviewing the plans in more detail.	Future Customers and Drought overview 2021
Non-Household Consultation	We used an existing network of businesses across our region, and that of Portsmouth Water, to engage these customers on the proposed Drought Plan.	25 interviews of 1-hour duration each including business customers who are reliant on water for their product /service and those who are not. This included 8 businesses from the Portsmouth Water operating area.	Business Customer report – Drought Plan 2021
Expert Stakeholders Interviews	Engagement of expert stakeholders, which allowed us to have a broader view of what our customers from different backgrounds and cultures need during drought conditions.	6 interviews of 1-hour duration each with representatives of harder to reach customers from both Southern Water and Portsmouth Water supply areas (including signposting services, housing services, language assistance and supported living representatives).	Expert stakeholder report – Drought Plan 2021

In addition to the business-as-usual insights, we also commissioned standalone pieces of research to focus on views of businesses on the Drought Plan and any differences with views of household customers.

While undertaking research, one of our priorities is ensuring that we are as diverse and inclusive as possible and are able to engage with harder to reach customers. As part of the Drought Plan consultation, we reached out and spoke with 6 expert stakeholders who represent harder to reach audiences (Citizens Advice, housing associations, language assistance representatives, supported living, etc.).

This approach meant that we were able to reach a large number of customers from across our region, with different backgrounds/cultures and at different stages of life. This gave us a robust overall reflection on the Drought Plan.

2.8.1 Overall summary findings

Impact on COVID-19 on crisis management

- Current customers are very accepting of levels 3 and 4 restrictions. They understand the need and there are very few indications of resistance (COVID-19 has increased acceptance of rules).
- Business customers impacted by water scarcity need help to become more resilient and to raise awareness of the impact of restrictions. They want to do more now to minimise impact in the future.
- For young people, the pandemic has made restrictions feel fairer and more acceptable. Future customers expect a multi-model approach to communication that reaches all at the time of drought.
- For future customers, it is important for the company to demonstrate how it is playing its part by reducing leakage and engaging with business and agriculture, so the changes seem fair. Young people are also willing to do their part in a crisis once they are on board with the idea (COVID-19 restrictions used as a reference). The general consensus is that more needs to be done now to make people aware from a young age about the issues we face.

Implications around the Drought Plan

- Customer knowledge of drought in the UK is fairly limited; therefore early engagement would be needed to ensure better understanding of the need for emergency measures. There is a misperception of what drought would look like in the UK i.e. customers are unprepared for its impact on routine life.
- Household customers feel the Southern Water Drought Plan provides reassurance, is comprehensive and is written in a manner that is easy to understand for customers.
- Demonstrating the link between changes in personal usage behaviours and the impact on droughts is important to help those who currently feel they are already sensible enough, to see what else they could do.
- It is sufficient for customers to know that there is a Drought Plan. They do not generally feel the need to see the details. Customers agree with the principles behind the application of restrictions although some exemptions do provoke a negative reaction.

Communications and education:

- Customers across the board find it hard to grasp the severity of the measures on their lives. More needs to be done to give context. For example, what would reducing per capita consumption to 50-80 litres per day look like? What changes can they make in their daily lives?
- An integrated communication plan needs to use multiple channels, build up the relevant messages over time and vary the approach to have the greatest impact.
- Vulnerable audiences require a higher level of service during severe restrictions. Other household customers support this prioritisation.
- Representatives of harder to reach communities felt that the Drought Plan would benefit from ‘community’ styled touchpoints such as newsletters, social media and peer-to-peer advocacy through leaders, service providers and caregivers i.e. a more tailored approach and key to build trust.

‘I think the plan is very good as what I read informs me that the plan includes what the water companies do in the event of a drought, what we as customers need to do and how this will affect the environment.’

3 Stakeholder Pre-consultation Summary

3.1 Objectives

We have collaborated closely with our stakeholders since before the development of WRMP24 to understand their priorities and those of the people they represent, share best practice and identify possible collaborative opportunities.

The full set of pre-consultation feedback and our response is covered in Annex 5.

3.2 Approach and methodology

Our approach to pre-consultation for WRMP24 is different from previous plans, as this is the first plan to be largely informed by the emerging Regional Plan produced by WRSE.

Our pre-consultation stakeholder engagement followed three main strands:

- Our business-as-usual stakeholder engagement (including through our existing stakeholder panels).
- Supporting WRSE's emerging Regional Plan consultation.
- Targeted engagement with statutory and non-statutory consultees and those likely impacted by infrastructure projects.

3.3 Building on our business-as-usual stakeholder engagement

As part of our business-as-usual stakeholder engagement, we hosted a series of stakeholder panels, met with key stakeholders and supported Portsmouth Water's engagement around the Havant Thicket Reservoir.

On 12 January 2022, just ahead of the start of the consultation on the Regional Plan we hosted our Water For Life Hampshire Stakeholder group where WRSE presented the emerging Regional Plan and upcoming consultation. We were joined by representatives from:

- Barings Estate
- Campaign to Protect Rural England
- Consumer Council for Water
- Environment Agency
- Hampshire and Isle of Wight Wildlife Trust
- Isle of Wight Council
- Little River Management
- Natural England
- New Forest National Park Authority
- Portsmouth Water
- Royal Society for the Protection of Birds
- Salmon and Trout Conservation
- Test and Itchen Association
- Test Valley Borough Council
- Wessex Rivers Trust

- Winchester City Council

In addition, we supported a number of site visits to our Portsmouth Harbour Wastewater Treatment Works (WTW) for stakeholders from Portsmouth Water's Havant Thicket Stakeholder Advisory group, including representatives from:

- Havant Borough Council
- Havant Borough Residents Associations
- Hampshire Bat Group
- Havant Green Party
- Stop the Chop.

3.4 Supporting WRSE's Regional Plan consultation

WRSE is an alliance of the six water companies across the South East of England, and one of five regional groups across the country developing the first regional plans for water resources.

WRSE consulted on their emerging Regional Plan between 17 January and 14 March 2022 and received approximately 1,150 responses from stakeholders and individual customers from across the South East. These included over a dozen local authorities in our area of operations:

- Canterbury City Council
- Crawley Borough Council
- East Hampshire District Council
- Hampshire County Council
- Havant Borough Council
- Horsham District Council
- Kent County Council
- Mid Sussex District Council
- Swale Borough Council
- Test Valley Borough Council
- Tonbridge and Malling Borough Council
- Wealden District Council
- West Sussex County Council.

WRSE also received responses from environmental stakeholders interested in our area of operation, including groups with region-wide and local focuses. Appendix 1 shows all stakeholders who responded to WRSE's consultation.

WRSE launched a consultation on the emerging Regional Plan with a co-ordinated media announcement with its six member companies. This resulted in extensive coverage across all the local BBC and Meridian news channels within Southern Water's supply area. Southern Water's Water Strategy Manager was interviewed, and details of key schemes were highlighted with the general public. The story also featured on a number of local radio broadcasts, in the local and trade press and online.

WRSE developed a dedicated engagement site to host all relevant documents which was visited over 8,500 times during the consultation period. Around 1,100 people registered to use the site with 720 completing the consultation survey.

During the consultation period, WRSE ran four webinars; a launch webinar on 20 January 2022 and three webinars focusing on the east and west of their region (covering Kent and East Sussex and then West Sussex, Hampshire and the Isle of Wight respectively) and the northern area. Through WRSE's Engagement and Communications Board, we influenced the design of these sessions and WRSE's wider engagement programme.

Our Water Resources team presented at the east and west webinars, as well as the launch event. This included providing more detail on the parts of the Regional Plan that would be reflected in our WRMP24. As part of our engagement during the consultation, we proactively promoted the webinars to a wide range of stakeholders and signposted the consultation via email and through our LinkedIn page to ensure as many stakeholders as possible were aware.

In total, 590 people joined WRSE's webinars, including regulators, national trade bodies and water sector stakeholders (such as retailers and members of the supply chain) and local interest groups, elected representatives and environmental groups.

On 1 March 2022, we supported an interactive Q&A session through the engagement platform where stakeholders could ask questions and receive a response within a few hours to help them finalise their responses to the consultation. Combined with questions asked during the webinars, WRSE received and responded to over 200 questions from stakeholders.

Through WRSE, we also engaged with the other regional groups as well as our neighbouring water companies. During their consultation, WRSE offered a retailer-specific workshop; however, interest was extremely limited, so the session did not go ahead. We sent pre-consultation letters to the following retailers operating in our area:

- ADSM
- Business Stream
- Cambrian Utilities
- Castle Water
- Clear Business Water
- ConservAqua
- Everflow
- First Business Water
- Pennon Water
- SES
- Smarta Water
- The Water Retail Company
- Veolia
- Water 2 Business
- Water-Plus
- Waterscan (Including self-supply retailers)
- Wave
- Yu Energy.

WRSE's Multi-Sector Stakeholder Group includes representatives of the energy, paper and agriculture sectors. This group was established to understand the needs of large water-using sectors in the South East and identify opportunities for potential collaborative interventions or trades.

In May 2022, WRSE published its response to its emerging Regional Plan consultation. This summarised stakeholders' views received during the consultation period and outlined how WRSE will move from its emerging Regional Plan to its Best Value Plan later in 2022. We supported WRSE's engagement around its Best Value Plan.

3.4.1 Targeted pre-consultation engagement

In addition to awareness raising communications, we offered one-to-one briefings to stakeholders likely to be impacted by large infrastructure projects being considered in the emerging Regional Plan such as the Havant Thicket and River Adur Offline reservoirs and potential desalination sites in the Shoreham area.

Table 3.1 lists stakeholders that were offered briefings relating to specific infrastructure projects being proposed through the emerging Regional Plan in their areas of interest. An example of one of the letters we sent in this regard is included as Appendix 2.

Table 3.1: List of invitees to engagement on key infrastructure projects.

Scheme	Stakeholders
River Adur Offline Reservoir	Andrew Griffith, MP for Arundel and South Downs Adur and Ouse Catchment Partnership CPRE Sussex Horsham District Council – Cabinet members for Planning and Development and ward councillors Horsham District Council – planning policy team Sussex Wildlife Trust WSCC – Cabinet member for Environment and Climate Change (and ward councillors)
Shoreham area desalination	Adur and Worthing Council – Directors and Executive member for Regeneration Shoreham Port Authority Shoreham Power Station East Worthing and Shoreham MP West Sussex County Council – Cabinet member for Environment and ward councillors
Littlehampton WTW recycling	Andrew Griffith, MP for Arundel and South Downs Horsham District Council – planning policy team

Adur and Worthing Council arranged a meeting to discuss the Shoreham area desalination. We also received responses from a local MP interested in the River Adur Offline Reservoir scheme and provided them with further information. The River Adur Offline Reservoir scheme was also discussed as part of our ongoing work with the five local planning authorities in the Sussex North area that are impacted by Natural England's Position Statement on water neutrality.

Local stakeholders who may not have otherwise been aware of the possible infrastructure schemes took part in the WRSE webinars and submitted questions and consultation responses. Some requested written briefings and more information. These stakeholders include:

- Adur and Worthing Council
- Blackstone Parish Council
- Campaign to Protect Rural Henfield
- Henfield Parish Council
- Horsham District Council
- Office of Andrew Griffith, MP for Arundel and South Downs
- Office of Mims Davies, MP for Mid Sussex.

3.5 WRMP24 specific pre-consultation activity

We sent pre-consultation letters to:

- Regulators and government bodies including: the Environment Agency, Natural England, Drinking Water Inspectorate (DWI), Office for Water (Ofwat), Regulators Alliance for Progressing Infrastructure Development (RAPID), Natural Resources Wales, Consumer Council for Water (CCW), Department for Environment, Food and Rural Affairs (Defra), Historic England and the National Infrastructure Commission
- Five licenced New Appointments and Variations (NAVs) operating in our area
- All five regional water resources groups (including WRSE)
- All five companies in the WRSE region and eight other water companies
- Ten catchment partnerships
- Water retailers for non-household customers
- Four local nature partnerships
- Environmental and water efficiency groups including the Countryside Charity (CPRE), Rivers Trusts, Waterwise and Salmon and Trout Conservation
- Planning directors and other contacts at 19 local authorities
- Four Local Enterprise Partnerships
- Potential trading partners including DS Smith, British Gypsum and Saint-Gobain (in addition to our work supporting WRSE's multi-sector group).

We received eight responses to our pre-consultation letters from:

- Adur and Worthing Council
- Environment Agency
- Havant Borough Council
- Historic England
- Horsham District Council
- Mid Sussex District Council
- Natural England
- Ofwat
- Portsmouth Water
- Salmon and Trout Conservation
- Two responses from one local resident.

We wrote directly to all the catchment partnerships in our area to notify them of WRSE's consultation on its emerging Regional Plan and two (New Forest National Park catchment partnership and East Hampshire Catchment Partnership) signed up for WRSE's webinars. Additionally, WRMP24 content was included in a series of workshops run by the Drainage and Wastewater Management Plan (DWMP) team in March 2022.

3.5.1 Key feedback from pre-consultation responses

The local authorities which responded to our pre-consultation letter asked questions about and raised concerns about the impacts of potential new infrastructure in their areas, including the associated energy, biodiversity and quality-of-life impacts on their residents.

Two local authorities stressed the importance of meeting the water neutrality challenge in our Sussex North water resources zone (WRZ) alongside the need to support customers and businesses to reduce water demand.

The importance of supporting customers to reduce demand for water was expressed by most stakeholders who responded to our pre-consultation letter.

Pre-consultation feedback and our responses are included in Appendix 3.

3.6 Key themes from WRSE's Regional Plan consultation

WRSE consulted on its draft regional plan ran from 14 November 2022 to 20 February 2023[6]. WRSE's emerging regional plan consultation took a regional view of the South East's water needs. This included options specific to Southern Water, such as water recycling at Havant Thicket Reservoir, transfers across the South East, as well as more policy-focused options such as nature-based solutions and demand reduction.

Some respondents to WRSE's emerging regional plan opposed it because of the inclusion of specific infrastructure options, including storing recycled water in Havant Thicket Reservoir.

3.6.1 Havant Thicket Reservoir and water recycling

Around 60 respondents opposed the introduction of recycled water from our Portsmouth Harbour WTW into the new Havant Thicket Reservoir. These included Havant Borough Council, individual local councillors, local Parish Councils, several local environmental and campaigning groups and local residents.

Respondents expressed concern that the proposals were a substantial change to the reservoir and that water recycling would alter the nature and water quality in the reservoir, with potential downstream impacts. It was felt this would also impact the proposed ecological and recreational benefits of the reservoir.

Some respondents, particularly local residents, described the proposal as recycling 'sewage' into the reservoir, or expressing fears the water would have a high chemical content. This was considered to be wholly unacceptable, in principle, particularly because residents felt they had not been consulted, and due to perceived potential environmental impacts.

Responses suggested that the reservoir proposal would not have been approved if this proposal had been highlighted earlier and questioned why there had not been more engagement with affected communities.

The carbon and water quality impacts associated with the water treatment processes and proposed lengthy transfer pipelines were also a concern, and it was considered that other better alternatives existed.

3.6.2 Efficient use of water

The demand and leakage reductions proposed in WRSE's plan was supported by the Environment Agency, Natural England and Waterwise, as well as a range of other regional stakeholders. However, they did ask for greater clarity on how these targets will be achieved.

Responses received through WRSE's online questionnaire mostly supported the proposals for supporting customers use less water while reducing leakage. However, some respondents were concerned about the deliverability of these targets.

[6] More details on the WRSE consultation are available at Our consultation | Water Resources South East (engagementhq.com)

Several local authorities in Sussex highlighted the water neutrality challenge in our Sussex North WRZ. This emphasises the importance of implementing robust water efficiency measures. Some authorities stated that they were already seeking to achieve a PCC of at least 110 litres per head per day (l/h/d) in new builds and pointed to the work that indicated a target of 85l/h/d was achievable. It was also highlighted that local targets were having mixed success at local plan examinations.

3.6.3 Transfers around the region

There was broad support for the use of transfers between regions and across the South East. The DWI stressed the importance of addressing risks associated with changes in taste and feel of water, potential corrosivity impacts on networks and ensuring the appropriate infrastructure is in place.

Natural England emphasised that new pipelines would only be acceptable if it was clearly demonstrated that designated sites and priority habitats had been protected, compensated or suitably mitigated. The Canals and Rivers Trust supported the principle of using its infrastructure to facilitate transfers within the region, as well as between regions.

The importance of ensuring that new transfers consider the needs of other abstractors was also highlighted. For example, where a transfer could divert flows relied upon by downstream abstractors (such as the agricultural or energy sectors) who may have limited alternative options available.

Responses through WRSE's survey were supportive of the principle of using transfers, but some opposed specific transfers within the region (such as a transfer from Thames Water into our region from the proposed South East Strategic Reservoir Option (SESRO)).

Respondents agreeing with the proposals were of the view that transfers increase the ability to move water to where it is needed. Many respondents supported the use of canals and rivers ahead of pipelines due to their potential wider cultural and environmental benefits.

Concerns were raised about the potential financial and environmental costs of pumping water over long distances, alongside the lack of detailed information about the carbon impacts of proposed transfers and measures to mitigate this.

4 Draft WRMP24 Consultation

We published our draft WRMP24 (dWRMP24) on 14 November 2023 for a 14-week consultation during which we organised a number of webinars and meetings to explain our plan to a range of stakeholders including our regulators. We also widely publicised the consultation through the media to encourage our customers to share their views and we held a number of customer focus groups to gain insight.

We had consultation feedback via our team email and our online survey. Some feedback on our plan was sent directly to Defra. We have included the latter in our written responses' statistics. By the end of the consultation in February 2024, we had received almost 600 responses from members of the public and organisations and we have carefully considered all the feedback received. The response breakdown was as follows:

- 469 written responses
- 122 survey responses

Of 122 responses to our online consultation questionnaire, 28 were on behalf of organisations, whilst 91 of the responses were submitted by individuals. Three respondents did not confirm either way.

Out of the 122 responses, 62 respondents confirmed that they received water supply from Southern Water, with 51 stating that they did not. The remaining nine did not provide a response.

In addition to the questionnaire responses and the three responses from statutory consultees, we received a total of 469 other written responses, either by email or letter. The vast majority of these responses were from our customers or members of the public. The majority of consultation representations relate to Havant Thicket Reservoir or the Hampshire Water Transfer and Water Recycling Project (HWTWRP) and share common themes.

The consultation feedback and our responses to individual comments are covered in our Statement of Response that was published on 31 August 2023[7]. We summarise the Statement of Response process below.

4.1.1 Key themes from the consultation feedback

The feedback covers a range of topics, but a few key themes have emerged. These, and our responses to them, are given below.

- **Strong support for demand management:** Demand management is a key component of our strategy to ensure that we are able to maintain uninterrupted supplies of water to our customers in all but the most extreme drought events. The strategy set out in our dWRMP24 included reducing leakage by 50% by 2050 and reducing PCC to 109l/h/d by 2040 under normal year conditions. The vast majority of respondents expressed strong support for reducing leakage and PCC. A number of respondents want us to aim for more ambitious targets and/or achieve the targets earlier.

  The Government's Environmental Improvement Plan (EIP)[8] recommends reducing PCC to 110l/h/d under dry year conditions by 2050 (2049-50), reducing non-household demand by 9% by 2037-38 and reducing leakage by 50% by 2050. We plan to meet the targets for reducing non-household

[7] To view the August 2023 Statement of Response (SoR) and its annexes go to WRMP24 Survey (southernwater.co.uk)
[8] Environmental Improvement Plan 2023 - GOV.UK (www.gov.uk)

consumption and leakage as set out in the EIP as a minimum. We are aiming to achieve a dry year PCC of 110l/h/d by 2045 instead of 2050. In our case, a dry year PCC of 110l/h/d roughly equates to a normal year PCC of 100l/h/d.

- **Perception of bias towards large infrastructure schemes:** Our dWRMP24 included a number of desalination, water recycling and bulk import schemes. A number of respondents have pointed to this and suggested that we may have overlooked smaller, local solutions in favour of large infrastructure schemes. A few respondents have mentioned the absence of Aquifer Storage and Recovery (ASR) schemes in this regard.

  The size of the supply-demand deficit we face and limited opportunities for getting any more water from rivers and groundwater means that we are reliant on 'non-traditional' sources of water such as desalination and water recycling together with bulk imports from our neighbouring companies.

  Our dWRMP24 included six groundwater options and all of them were selected in the plan. Most of them involved enhancement to existing assets in order to derive the maximum benefit under current licences; but they also include a Managed Aquifer Recharge (MAR) scheme in the River Test catchment. However, these are typically small schemes and cannot provide the volume needed to achieve supply-demand balance.

  We are currently investigating the environmental impacts of a number of our existing sources under the Water Industry National Environment Programme (WINEP). The investigations are due to be completed in 2027. We will be fully able to assess the further availability of water from groundwater and surface water sources once the investigations are complete.

- **Concerns around the Hampshire Water Transfer and Water Recycling Project (HWTWRP):** Some respondents have opposed our proposed use of HWTWRP to fill Havant Thicket Reservoir. The areas of concern include uncertainty around delivery dates, benefits and environmental impacts. There were also concerns that alternative options have not been adequately explored.

  The selection of HWTWRP in our plan is primarily driven by the changes to our licences for the rivers Test and Itchen which significantly reduce the amount of water we can take from these rivers.

  It will also help to protect natural chalk streams by allowing us and Portsmouth Water to reduce our groundwater abstraction impacts on these unique habitats across Hampshire and West Sussex.

  We will use global best practice for HWTWRP with a multi-barrier approach and monitoring to ensure high water quality when transferred to the Havant Thicket Reservoir. We will monitor the quality of treated effluent from the Portsmouth Harbour WTW at the water recycling plant and will shut it down if water cannot be treated to required standards. The recycled water will also have a lower nitrate level than the spring waters, due to the treatment at Portsmouth Harbour WTW.

  We have a range of studies and investigations ongoing as part of the consenting process for the HWTWRP. We have prepared a Preliminary Environmental Information Report (PEIR) which forms part of our public consultation in Summer 2024. We will report the preliminary findings on any likely significant environmental impacts of the project based on the information available at the time. We have designed this work to inform consultees' responses to the next consultation.

  We are currently carrying out a full Environmental Impact Assessment (EIA) for the HWTWRP as part of the Development Consent Order (DCO) process. We will share this as part of the public consultation for that consent. We are working with Portsmouth Water to support the identified mitigations and compensation, together with other environmental benefits, brought via the proposed scheme.

  We have revised the delivery date for HWTWRP to provide benefit from 2034-35.

4.1.2 Our Statement of Response

In response to consultation feedback, we have made a number of changes since our dWRMP24. These are described in our Statement of Response to our dWRMP24 [see WRMP Statement of Response] and reflected in our rdWRMP24. After we published our Statement of Response in August 2023 the Environment Agency sent us a letter and supporting annex in December 2023. This feedback from the Environment Agency focused on:

- The fact that we plan to deliver on the Environment Improvement Plan targets. The Environment Agency noted that the only target we are not planning to meet is the 2050 reduction of non-household consumption by 15%. We explain why this is in our main WRMP [see 3.1.1, Our Demand Management Strategy] and Annex 14.
- The lower levels of service in our Sussex North WRZ than provided elsewhere. The Environment Agency asked that our updated WRMP demonstrate how we are taking all possible actions to reduce risks to customers, the environment, and to enable growth. We set out our position on this is in our main WRMP and Annexes 2, 20 and 21.
- In our Hampshire resource zones the Environment Agency stated that abstraction from protected areas cannot continue at current levels and reliance on drought options from the Rivers Test and Itchen are not acceptable options beyond AMP8. We discuss this is in our main WRMP and Annex 20.
- The impact of delays to delivery dates for Havant Thicket reservoir, Hampshire Water Transfer and Water Recycling Project (HWTWRP) and the Littlehampton Water recycling scheme. The Environment Agency letter also noted that Sussex Coastal desalination has been deemed to be infeasible. The Environment Agency asks that we fully reflect the latest water supply situation, the causes for the delays, and the actions we are taking to mitigate the impacts on customers and the environment. We discuss this is in our main WRMP, Annex 20 and Annex 21.

We responded to this Environment Agency letter in February 2024 and provided assurances that we would take account of the feedback provided in the updated version of our WRMP that we intend to consult on in the summer of 2024.

5 Revised Draft WRMP24 Consultation

We published our revised draft WRMP24 (rdWRMP24) on the 11th of September 2024 for a 12-week consultation period during which we organised eight roadshows across our supply area and five area-specific webinars that lasted 75 minutes. These served as an excellent opportunity to explain our plan to a range of stakeholders and to answer any questions they may have had. We also issued a press release which was picked up by major newspapers and used various media streams in order to reach out to as many customers and stakeholders as possible.

We received consultation feedback via Defra, and through our team email and our online survey. We have included these all in our written responses' statistics. By the end of the consultation in December 2024, we had received 1,176 responses from members of the public and organisations and we have carefully considered all the feedback received. The response breakdown was as follows:

- 1,077 written responses.
- 99 survey responses.

Of the 1,176 responses received, three were from our regulators, 39 from other statutory consultees, 492 were on behalf of the public, three from charities/NGOs and 639 from other interested parties.

The consultation feedback and our responses to individual comments are covered in our Statement of Response that has been published alongside our fdWRMP24. We summarise the Statement of Response themes below.

5.1.1 Key themes from consultation feedback

The feedback covered a range of topics, but some key themes emerged. These are given below, and our responses to them can be found in our Statement of Response.

- **Consultation Process**
  - Public consultation and transparency
- **Population and housing forecasts**
  - Population forecasts
- **Best value planning and decision making**
  - Process/Plan
  - Profit
  - Cost and funding
  - Customer bills and financial burden
- **Business reputation and credibility**
  - Public trust in Southern Water
- **Climate change and environmental assessments**
  - Carbon impacts
  - Environmental assessments
- **Demand options and leakage**
  - Water efficiency

    - Demand reduction and leakage
- **Supply options**
    - Havant Thicket Reservoir and water recycling
    - Sea tankering
    - SESRO
    - Other supply options
- **Drought**
    - Drought options
- **Water neutrality**

In response to consultation feedback, we have made a number of changes since our rdWRMP24. These are described in our Statement of Response and are reflected in our fdWRMP24.

6 Next steps

We are seeking permission from the Secretary of State for Environment, Food and Rural Affairs to finalise our WRMP24.

Appendix 1 - Respondents to WRSE's Emerging Regional Plan Consultation

Government: Environment Agency; Natural England; OFWAT; DWI; Historic England
MPs: James Gray MP
Regional/Local Government: Mayor of London; Cherwell District Council; Oxfordshire County Council; East Hampshire District Council; Crawley Borough Council; South Oxfordshire and Vale of White Horse Council; Dacorum Borough Council; Waverley Borough Council; Kent County Council; Cotswold District Council; Havant Borough Council; Wealden District Council; Mid Sussex District Council; Swale Borough Council; PUSH - Partnership for Urban South Hampshire; Tonbridge & Malling Borough Council; Canterbury City Council; Test Valley Borough Council; West Sussex County Council; South Downs National Park Authority; Horsham District Council; Hampshire County Council; East Sussex Fire and Rescue; together with individual elected Councillors
Parish/Town Councils: East Hanney; Minstead; Charney Bassett; Horam; East Hendred; West Hendred; Rowlands Castle; Minstead - New Forest; Storrington & Sullington; Letcombe Regis; Willingdon & Jevington; Ardington and Lockinge; Burwash; Billingshurst; Heathfield and Waldron; Great Haseley; Woodmancote; Brightling; Yalding; Slaugham; Stroud Town Council; Wantage Town Council
Regional groups: Water Resources West
Business/Consumer organisations: Consumer Council for Water (CCW); Waterwise; NFU; Country Land and Business Association; Thames Valley Chamber of Commerce; Home Builders Federation; Energy UK; British Marine
CPRE Branches: Kent; Vale; Sussex; Oxfordshire; Hertfordshire
Wildlife Trusts: Sussex Wildlife Trust; Gloucestershire Wildlife Trust
AONB organisations: Cotswolds AONB
Canals, rivers and environmental organisations: Canal and River Trusts; The Inland Waterways Association South East Region; Rivers Trusts in the South East; Cotswold Canals Partnership; Cotswold Canals Trust; Proprietors of the Stroudwater Navigation; Wilts & Berks Canals Trust; Darent River Preservation Society; Upper Itchen Initiative; Stroudwater Navigation Archive Charity; The Revivel Association; Chalk Rivers Action Group, River Thame Liaison Group; Friends of the Ems; Cotswold Canal Connected Partnership; Stroud Valleys Canal Company; Salmon & Trout Conservation; Friends of the Westbrook and Stonebridge Pond; Ver Valley Society
Campaigning organisations: GARD; Wantage and Grove Campaign Group; Chiltern Society; Faversham Society; Havant Green Party; Oxfordshire South and Vale Green Party; Mayday Action Group; Hendreds Environment Group; Fairer World Linfield, Central Sussex Climate Network; Greening Westbourne; Willingdon Residents Association; Rowstock Residents Association; Planning Oxfordshire's Environment and Transport Sustainably (POETS)
Other organisations: MOSL; NHS - EPPR; Castle Water; Arqiva; RWE; Everflow Water; Clearwater Property; AA Compliance & Consulting Ltd; Thakeham Homes; Jonathan Fisher Environmental Economics; H Walker and Son; ADLU; Oak Leaf Forest School; St Helen and St Katharine School; Royal Agricultural university; The UK2070 Commission
Individual residents in areas affected by schemes, and members of the public

Appendix 2 - Example of Targeted Pre-Consultation Letter

River Adur Offline Reservoir

Good morning / good afternoon,

Earlier this week, we wrote to you to let you know about WRSE's upcoming consultation on their emerging Regional Plan - the first region-wide plan looking at our future water resources needs.

About WRSE

In case you weren't already aware, WRSE is an alliance of the six water companies that supply drinking water across the South East and has been working with government, regulators and stakeholders to develop its emerging Regional Plan.

Their plan includes an early outline of the schemes, policies and interventions identified through extensive modelling needed to secure sustainable water resources to 2060 and beyond.

WRSE's plan will inform our water resources management plan (WRMP24), which we'll consult on later this year. It is crucial for us that our stakeholders have the opportunity to respond to WRSE's consultation - as their feedback will shape our own plans later this year.

Potential new River Adur Offline Reservoir

I wanted to draw your attention to a specific scheme that features in WRSE's emerging Regional Plan.

WRSE's modelling has identified the potential for a new River Adur Offline Reservoir. Water from the Eastern Branch of the River Adur would be captured during high flows and stored in the new reservoir, before being treated and supplied to customers across West Sussex.

This scheme has been considered during previous versions of our water resources management plan but has not been chosen before. However, it has now emerged as a potential option due to the increased resilience it could deliver by allowing us to capture and store water in winter, when flows are higher, to be used during warmer months. Subject to the more detailed work we need to undertake, it may become a preferred option in our WRMP24.

We understand the development of such a significant infrastructure project may cause concern in local communities, which is why I wanted to make you aware of it as early as possible. More detail will be included in WRSE's consultation, which begins on 17 January.

The option is at an early stage of development, and we will undertake thorough modelling and options analysis as it progresses. This investigative work includes understanding the environmental impacts and concerns raised by local stakeholders.

As we highlighted earlier this week, WRSE is holding four webinars to provide more detail on its emerging Regional Plan throughout the consultation period. Their webinar focusing on the west of their region, taking place on 1 February, will focus on solutions in West Sussex - including the proposed reservoir.

Given the potential significance of the proposed project, I'd be happy to arrange a briefing to discuss it in more detail, alongside the links between WRSE's Regional Plan and our own WRMP24.

Appendix 3 – Summary of Pre-Consultation Feedback

1. Pre-consultation Feedback
2. WRSE-specific Feedback
3. Feedback following the June 2022 Submission

1. Pre-consultation Feedback

Respondent	Feedback	Response
Environment Agency **WRMP24 Pre-consultation letter** **April 2022**	**General points** 1. Your WRMP24 planning period must start in 2023 and there must be no deficits in the final planning scenario across the planning period. 2. We expect you to produce a best value plan accompanied by completed planning tables. 3. We expect you to provide justification and evidence that the preferred options are the best value options for meeting the planning challenge in WRMP24. 4. Ensure consistent naming of options between tables and the WRMP24 commentary so it is clear to the reader what the options are referring to in the planning tables. The options presented in the gated process should also align with those detailed in your WRMP24. 5. Review and consider our response to the WRSE emerging plan when developing your WRMP24. 6. Provide further evidence and clarify how you will be including the impacts of covid on demand in your baseline demand forecast. 7. Ensure that all transfers and shared resources with neighbouring companies align. 8. Your draft WRMP24 should reflect the current delivery status of your WRMP19 schemes and how you are operating your network. 9. Your plan should clearly demonstrate how you have considered and tested what the right level of service is for your customers. You should provide details on what basis this decision has been made, including planning assumptions and customer consultation. You should discuss your levels of service with regulators, confirming whether they remain the same as WRMP19, and how they may change over the planning period. 10. Outage was above the WRMP19 forecast in your 2020/21 annual review. You should ensure you are following the Environment Agency water resources planning guideline supplementary guidance on outage (March 2021) and you should discuss your approach with us. You should review your outage allowance assumptions and confirm they are appropriate for the start of the planning period. 11. Links between WRMP and drought plan - We expect to see clear links between your WRMP24 and your Drought Plan, so that your customers, regulators, government and interested stakeholders can understand. 12. Share your WRZ integrity report and updated problem characterisation before your draft WRMP24 is submitted. 13. SEA - You will need to demonstrate how your Strategic Environmental Assessment has informed development of your WRMP throughout the process. You must follow the methodology you have committed to in the technical note you shared for consultation dated 20 Feb 22 and review and consider our comments on this.	1. Addressed - see Tech Report s3 + Annex 24 2. Addressed - see Tech Report s7 + Annex 24 3. Addressed - see Tech Report s7 4. Addressed - see Tech Report s7 + Annex 24 5. Addressed – see Tech Report s4 6. Addressed – see Tech Report s5 7. Addressed – see Tech Report s5 8. Addressed - see Tech Report s3 9. Addressed – see Tech Report s4 10. Addressed – see Tech Report s5 11. Addressed – see Tech Report s2 12. Addressed – provided in our early draft June submission. 13. Addressed – see Tech Report s8
Environment Agency	**Western area** 1. We expect the WRMP24 to provide the justification of need to support the SRO gated process. This will support further gate progress within the RAPID process. You should ensure the SRO gated process aligns with your WRMP24 and WRSE regional plan. You must present the need for the SRO schemes, their timings, and the justification for your decisions including evidence that the preferred options are the best value options for meeting the planning challenge in the regional plan and WRMP24. 2. Clarification around the operation and utilisation of the preferred SRO is needed, including under different drought scenarios. We expect this to be provided in your WRMP24	1. Addressed – see Tech Report s3 and s7 2. Addressed – see Tech Report s7
Environment Agency	**Central area** 1. Following recent communication from Natural England, you should ensure that options to resolve the deficit in Sussex North before Weir Wood is brought back online, are fully appraised and reflected in the plan and come online as soon as possible.	1. Addressed – see Tech Report s3

Respondent	Feedback	Response
	2. You should consider the use of any transfer of water to Sussex Worthing from Sussex North in the short term in your draft WRMP24. 3. You should consider and discuss with us, both emergency contingency and drought for Sussex Worthing including how the bi-directional Sussex North transfer would be used in these circumstances. 4. Whilst the transfer from Sussex North to Sussex Worthing cannot be utilised in the short term until there is no longer immediate security supply risks and/or water neutrality requirements, you should consider the implications on the assumptions for your supply modelling and WRSE's modelling of transfers between water companies.	2. Addressed – see Annex 2 3. Addressed – see Annex 2 and 22 4. Further water resources (Pywr) modelling planned in autumn 2022
Environment Agency	**Wider issues to consider** 1. Government expects water companies to follow the water company water resources planning guideline when preparing their draft WRMP. It provides guidance and details on the technical methods of the water resources planning process. This revised guideline was released in December 2021 and has been jointly produced by the Environment Agency, Natural Resources Wales, the Welsh Government, Defra and Ofwat. 2. To support our guideline, we have also produced a set of supplementary documents and templates that provide further information on specific topics. These include the supply-demand and water company level tables to be used for capturing and presenting water resources planning data at a resource zone level to support your WRMP. These are all available from Share Point or upon request from the Environment Agency. 3. Defra will be releasing 'the government expectations' which sets out advice for water companies in England. Government expects you to take account of the advice set out in this document when developing your WRMP. 4. We expect you to consider the Water Industry Strategic Environmental Requirements (WISER) and ensure your WRMP is aligned with your emerging Water Industry National Environment Programme (WINEP) for PR24. Your WRMP should clearly demonstrate your commitment to protect and improve the environment. As outlined in the National Framework for Water Resources, you should also demonstrate your long-term environment destination. 5. We also expect solutions identified for Southern Water through the WRSE work to feature in your WRMP unless there is a very good reason for not doing so.	1. Addressed – see Tech Report s2 2. Addressed – see Annex 24 3. Addressed – see Tech Report s2 4. Addressed – see Annex 9 5. Addressed – see Tech Report s7
Environment Agency	**Customer and third-party involvement** 1. We welcome your proposals outlined in your pre-consultation letter to consult with a range of statutory and non-statutory stakeholders, including your customers and neighbouring water companies.	1. Addressed – see Tech Report s4 and Annex 5
Drinking Water Inspectorate (DWI) **Long term planning for the quality of drinking water supplies** **July 2022**	The Inspectorate has issued guidance on the Long-Term Planning of Water Supplies which should be followed when securing new supplies. When developing emerging and detailed plans for water resources, water companies (or those delivering schemes) should have due regard for drinking water quality and the potential for water quality risks to exist. Water companies already use the drinking water safety planning approach to risk assessing the potential impact on water quality and identification of required controlling actions when designing and operating water supply systems, following the source to tap approach. In the case of new inter company or cross catchment transfers (raw and potable) and new resource schemes (e.g., water re-cycling, desalination) water companies should adopt and expand the drinking water safety planning approach to encompass the potential new drinking water quality risks associated with these types of schemes. Therefore, companies should take water quality considerations into account (i.e., to complete a risk assessment on the potential impacts on public health, wholesomeness and acceptability to consumers of new or altered supply arrangements, including cross-company transfers of raw or treated water,	COMPLETE • We have taken onboard this advice when developing options for the Regional Plan and WRMP. • As we further develop our plan and move into delivery, we will ensure drinking water quality risks are thoroughly considered as part of the scheme design. • We work with third parties to mitigate raw water quality risks through our Catchment First initiative

Respondent	Feedback	Response
	mixing of water and new resource schemes) when developing options stemming from the regional plans. Where a potential risk is identified, prior to making supply changes, a company must take steps to mitigate that risk	
DWI	For raw water transfers the development of the drinking safety plan and risk assessments should consider the risks identified within the upstream drinking water safety plans and to identify whether further mitigation is required at the receiving location. Investigation of raw water quality risks may require further monitoring to support the existing available data sets and due regard should be given to future risks (including emerging contaminants). Acceptability considerations should be risk assessed including the change of source type which may result in a change in taste, odour or feel of the water to consumers and any impacts on the distribution system in terms of corrosivity risks.	As above
DWI	For potable transfers consideration should be given to the age of water, whether appropriate mixing is occurring within intermediary storage reservoirs/conveyance infrastructure and risks associated with disinfection by products especially if the supply is re-chlorinated. Consideration should be given to acceptability risks associated with the change of source type or mixing of waters which may result in a change in taste, odour or feel of the water to consumers and any impacts on the distribution system in terms of corrosivity risks.	As above
DWI	Resource schemes such as desalination and water-recycling will introduce different risks associated with the treatment including the challenge of remineralisation. Risks associated with the change of source type and/or blending arrangements which may result in a change in taste or feel of the water to consumers and any impacts on the network in terms of corrosivity risks should also be explicitly assessed and appropriately managed. Due regard should also be given to future risks including emerging contaminants which may impact on water quality. Water recycling may pose new challenges in terms of acceptance by consumers of the recycled nature of the water. Water companies will need to mitigate these new risks and early consumer engagement is seen a key measure to ensure acceptability. Due regard for the operation of the sources should be given, including appropriate safeguards at the upstream wastewater treatment works and water recycling plants. Consideration of the requirements of Regulation 31 including availability of approved products and chemicals needed in any treatment process and distribution system should also be made.	As above
DWI	The Inspectorate considers early engagement with consumers is key to mitigate acceptability issues relating to taste, odour or the feel of water for new resource schemes wherever there is a change in source water, or a new source is used.	As above
Horsham DC **Pre-consultation letter** **March 2022**	We are naturally also need to understand more, as soon as possible, about the proposal for a new River Adur Offline Reservoir. However, the recently published draft WRMP gives very little detail regarding either of these matters.	• We have included a proposal for a new River Adur Offline Reservoir in our draft WRMP and are keen to hear views through the consultation. • Further details of the options are included in the option fact file (Annex 13)
Horsham DC	It is also so far unclear how, and when, measures will be taken forward by Southern Water towards achieving the supply-demand balance (and in the short/medium term, achieving water neutrality) that is necessary going forward.	• S7 of the Tech Report provides more details on our proposed strategy and the Non-Technical Summary provides a clear summary
Adur & Worthing Council **Pre-consultation letter** **March 2022**	**Ecology/Biodiversity impacts** There is the potential for development adjacent to and in the vicinity of the River Adur (particularly in the northern parts of the Adur Local Planning Authority area) to lead to loss of or significant harm to intertidal habitats. You will of course be aware of the location of the Adur Estuary Site of Special Scientific Interest, much of which is already described as in unfavourable and declining condition. There are strong policies in the National Planning Policy Framework (NPPF), Adur Local Plan, Shoreham Harbour Joint Area Action Plan and Flood Risk Management Guide SPD to ensure protection of these habitats and ensure provision of net gains for biodiversity. Mudflats are considered	• We have taken onboard this feedback for our environmental assessments for the WRMP24 and will consider for the ongoing process of finding an alternative to the Shoreham desalination scheme. • We have no intention of causing adverse impact and aim to provide biodiversity net gain through the development of a best value plan.

Respondent	Feedback	Response
	important biodiversity habitat and saltmarsh is included in the list of 'irreplaceable habitats' within the NPPF 2021. Both mudflats and saltmarsh are listed as UK Biodiversity Action Plan Priority Habitats. There is also a RSPB Reserve within the Adur Estuary. The Council would object to any proposal which would have an adverse impact on these highly important and sensitive habitats.	
Adur & Worthing Council	You may also be aware of the Sussex Kelp Restoration Project - although this will be located some distance offshore, we would seek reassurance that any discharges from the proposed plant would have no adverse impact on this important scheme, or water quality in general	• Noted and will be considered.
Adur & Worthing Council	**Visual/Physical impact** Again, without knowing precise locations it is difficult to assess this, and I believe that more than one location in the Shoreham area is being considered. However, we understand that a site known as Shoreham Gateway (which lies immediately south of the A27 flyover on the eastern side of the river Adur) is a potential location. This is a sensitive landscape; the site's open character provides an important foreground to the setting of the Old Shoreham Conservation Area and Grade 1 listed St Nicholas Church, and also has a visual relationship with the Grade II* listed Old Tollbridge. The Council would object to the development of this site for the proposed use. We understand other locations closer to the Harbour are also under consideration; given the developed character of this area there is a limited range of sites. The Council appreciates that the recent and planned growth in residential activity has increased the demand for water. However, it should be noted that the harbour area is in close proximity to residential development, both existing (including the area of houseboats), and those allocated for development within the Adur Local Plan and Shoreham Harbour Joint Area Action Plan. We would be concerned at any adverse impact on quality of life for existing and future residents, and local businesses. Shoreham and Shoreham Beach are also popular with visitors, and the Council would have concerns at any facility which undermines this attractiveness.	• Visual/physical impacts are a key consideration in the location of any water resource developments and these concerns are noted.
Mid Sussex District Council **Pre-consultation letter** **March 2022**	Mid Sussex District Council supports the co-ordinated and collaborative approach to securing future water supplies. Detailed responses are set out in the appendix to this letter. The emerging water resources regional plan and subsequent individual water companies' Water Resource Management Plans will be critical to support the delivery of new housing and other economic growth in the area. Local authorities are required to plan for future growth and need to be certain that the necessary infrastructure provision will be delivered in a timely manner alongside new development. The Council considers that the water companies should commit to investing in new and improved infrastructure now to ensure delivery of much needed development is not delayed. The Council recommends that the emerging proposals for the Mid Sussex District Plan 2021-2038 are taken into account when considering planning for future water resources as this document will set out the likely scale of future growth. The level of development proposed in current plans should also be taken into account, for example, the emerging Site Allocations DPD and neighbourhood plans.	• We have updated our demand forecast to reflect the latest household projections from the Local Plans.
Mid Sussex District Council	Mid Sussex District is adjacent to the local authorities currently affected by the water neutrality issue in relation to the designated nature conservation sites in the Arun Valley. Although not directly affected, water neutrality is of concern to the Council and work on the draft Mid Sussex District Plan 2021-2038 has been paused in part whilst this matter is resolved. The Council would like to be reassured that this matter is being addressed as a priority and that actions are being taken by Southern Water to resolve the situation.	• Section 3 of Tech Report sets out our approach to addressing the water neutrality issue
Mid Sussex District Council	To help increase resilience to the effects of climate change, the Council strongly feels that the water companies have a key role to play in requiring developers to implement higher water efficiency standards and to lobby the Government to tighten Building Regulations sooner than 2060. Due to the local water neutrality issue and the availability of water resources in general, including the security of	• Annexes 14 and 15 set out our Target 100 water efficiency plans which include influencing government on tighter standards.

Respondent	Feedback	Response
	future water supply, these interventions are needed now. The emerging Mid Sussex District Plan 2021-2038 will set out water consumption standards for future development	
Natural England **Pre-consultation letter** **March 2022**	Southern Water should not rely solely on the WRSE SEA scoping (September 2020), as it is uncertain at this stage whether this has been updated to take on board Natural England's previous comments, which concluded that this version was not legislatively compliant. Natural England have not received an updated version of the WRSE SEA scoping and it is uncertain what version has been provided to water companies (and whether this included Natural England's response to the last version we reviewed).	• Annex 18 provides our SEA Environmental Report setting out how we have addressed these concerns.
Natural England	There are two options, either the WRSE scoping document is amended, if it hasn't been already, and Natural England review this (if we are provided track changes/log of updates this would speed this up). Once compliant, the updated version can be used by the water companies (we would still recommend this is checked by their legal team to ensure they are happy to use it and that there is nothing else to add, in relation to individual WRMPs). Water companies should still inform Natural England of their approach and/or provide their updated version to Natural England for review. Or if water companies are using the existing scoping for their WRMPs, Natural England think it is fair to request to be consulted on the scoping version that they are basing theirs on and if this hasn't been updated to reflect Natural England's comments, the likelihood is that they will have to do their own scoping to address Natural England comments for it to be compliant. If the decision is not to do this and make no changes, Natural England will just re-send the same response.	• See above
Natural England	Regardless of the option taken forward, water companies should consult Natural England, as a regulator, separate to WRSE, on their approach regarding the SEA scoping for their WRMPs.	• See above
Natural England	Natural England support Southern Water carrying out their own HRA, WFD, BNG and Natural capital assessments based on the WRSE methodology statements, it is however the company's responsibility to ensure the WRSE methodology statements are legislatively compliant before using. Please note that Natural England did not review the WRSE Method Statement: Environmental Assessment, post consultation version November 2021, as this was not provided to us for consultation or review, and we were unaware this had been published. Please ensure this complies with the relevant legislation prior to using for the environmental assessments. Natural England plan to review these in combination with receiving the updated WRSE SEA and HRA, until this point Natural England cannot support at this stage whether these documents alone are satisfactory and meet all the legislative requirements. Natural England will review the WRMP24 consultation based on legalisation duties and requirements with reference to this methodology. Natural England has also responded to the WRSE consultation, please refer to Natural England's response to this for detailed comments on WRSE aspects and ensure any relevant comments to this consultation are addressed when completing your own plan.	• Addressed within the SEA (Annex 18) and HRA (Annex 20)
Natural England	Natural England are aware of the potential schemes listed in the letter dated 24 February 2022 and are discussing with relevant parties in Southern Water Services in most cases. We would encourage continued engagement on these schemes as they progress to ensure the best outcomes can be achieved for the environment that meet the necessary legislative requirements. Further discussions are needed on some of these options, as little or no engagement has occurred with Natural England to date. Natural England is pleased demand management remains a crucial component of managing your supply and demand balance in the future and that the target 100 programme will be continued. This is an important step to reduce water usage along with 2050 water leakage commitment.	• We are committed to continuing to engage with Natural England in the consideration of individual options and their environmental impacts and the overall development of the plan including the balance between demand management, catchment management and supply schemes
Member of the public **Pre-consultation letter**	Your plan is based on the false assumption that there is 'insufficient' water to meet demand. If this is correct then the United Kingdom Technical Advisory Group Report, UK Environmental Standards and Conditions, would say that maximum use was already being made of the water in our rivers and there	• We are committed to reviewing new ideas and this is especially important given the water stressed nature of the South East. We intend to investigate

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March 2022	is no possibility of a further reduction of river flow into estuaries. In fact, from Page 50 on, the report shows it is possible to reduce the flow of water from the rivers into their estuaries in the Southern Region by half. There is sufficient water, and my proposal enables this water to be used. By accepting that there is no more water in the local natural system you are forced into adopting high energy use schemes which create huge emissions of Carbon Dioxide. My proposal, which you already have received, recognizes that the UKTAG Report shows that flows into the estuary can be reduced and is designed to intercept that	this option further for consideration in the revised Regional Plan and our revised draft WRMP.
Member of the public	**Misunderstanding** It appears to me there is a misunderstanding. Abstractions from the inland waters are regulated using the Water Resources Act 1991. The flow for regulation is measured at the final weir. It is then assumed that this water must be allowed to flow into the estuary. As shown above, this is not correct. This means water companies cannot access any river flows during the hands-off period allowing perfectly usable water to flow to waste. This, in effect, creates a 'self-induced drought' because any rainfall that enters rivers during the hands-off period is lost to sea.	• See above
Member of the public	**UKTAG Report** The UKTAG report shows rivers in the Southern Region have low sensitivity and moderate status. Table 27 on page 54 states that flows at Qn95 and below, can be reduced by 50%. Using data from the National River Flow Archive shows it would be possible to abstract a total of 600 Megalitres per day, almost every day, from Southern Region rivers, probably twice the current abstraction and much more than is needed to meet any future demand, even at current per capita consumption. My proposal makes this water available and as rivers are spread fairly evenly throughout the region, the water is available locally. You already have details of my proposals for abstracting additional water from rivers, but I will reiterate that my system is cheap, flexible and easy to install. It would enable a rapid solution to the water shortfall	• See above
Member of the public	**Zero Carbon Emissions** Water resources have a very critical part to play in the campaign for zero carbon emissions. Your plan includes, amongst others, a number of high energy use schemes such as recycling from Littlehampton, desalination at Shoreham and Medway and long-distance transfer from Havant Thicket. These will each use more than 6 Megawatts of electricity for 1 Megalitre of water produced and, by association, be responsible for emitting hundreds of thousands of tonnes of carbon dioxide into the atmosphere. This is unacceptable and is probably in contravention of the Paris Agreement and the recent COP26 Meeting. My proposal makes the raw water available at the final weir by using the rise and fall of the tide and the natural flow in the freshwater section	• We have set out our plans to meet net zero in s10 of the Tech Report
Member of the public	**Reduction in per capita consumption** A major part of your plan is to ask, possibly demand, that customers use 30%+ less water. There is no certainty that this will be achieved. Evidence put before the House of Lords Science and Technology Committee said that, historically, even small increases in demand had never been achieved. At that time, 2006, the prediction was for an increase of 0.9% per annum and current data shows this was way under the actual increase to date. It is essential that water resources plans have as much certainty as possible. My proposals enable continuous abstraction of half the Qn95 flow from all flows. The flows down the estuary are maintained by storing tidal water. Both are completely certain.	• We have included our assessment of how an average PCC of 100l/h/ could be achieved in Annex 14 and 15
Member of the public	**Flood periods** I refer to your response to my submission for WRMP19. You quoted the Environment Agency comment that storage in the flood plain would cause a problem during flood periods. This shows the writer had not understood my proposal. It is only necessary to introduce tidal water storage when freshwater river flows are less than the Minimum Residual Flow. Above this flow level, and certainly at flood flows, any	• We are committed to reviewing new ideas and this is especially important given the water stressed nature of the South East. We intend to investigate this option further for consideration in the revised Regional Plan and our revised draft WRMP

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	tidal storage would be out of use and empty. Any moveable structures would have been removed from flow areas and any sluices left open. There is no possibility that the moveable sluice gate system or small tidal lagoon system I proposed could interfere with flood flows.	
Member of the public	**WRMP19 and flooding** Southern Water include in their plan the construction of a surface water impounding reservoir in the flood plain of the Adur Valley, north of Shoreham. There is no minimum residual flow for the Adur because there are currently no abstractions. When designed, the reservoir will have to hold enough water, plus reserve, to supply for at least 40% of the year and be able to meet demand for two years. If both rivers together, East and West Adur, are capable of supplying 10 Megalitres per day this will require a storage of at least 4500 Megalitres and probably occupy an area of 45 Hectares. This would be a permanent structure removing this area permanently from the flood plain. My proposal would require only 5 Megalitres of storage temporarily occupying an area of 0.1 Hectares.	• We are committed to reviewing new ideas and this is especially important given the water stressed nature of the South East. We will consider this further as part of the development of the revised Regional Plan and our revised draft WRMP.
Member of the public	**Marketability** Southern Water also commented that my proposal is not close enough to market to be considered a way of meeting demand. Unfortunately, despite a number of further submissions, Southern has not attempted to establish the viability of my proposals. I have sent proposals for the River Test, the Western Rother and the River Medway, but have received no response. I find this approach completely opposite to Southern Water's acceptance of the Natural England position statement for the North Sussex Water Supply Zone. Natural England alleges that groundwater abstraction at Pulborough is causing damage to Arun Valley Sites and they do not wish for any further abstraction that would be caused by further house building. Southern announced some years ago that the resources in the zone were unable to meet demand and it was necessary to import water from Portsmouth. As conditions have not changed, any water for these additional properties will also have to be imported and therefore they will have no influence at all on abstraction at Pulborough or cause any further deterioration in the Arun Valley sites. Southern appears to be willing to accede to the 'water neutrality' proposal by Natural England, unproven at this scale in the UK, and has no certainty of success (and almost certainly will not succeed) and in any event will not solve the Natural England problem and yet, at the same time, simply reject my proposals which although requiring some regulatory acceptance, are certain to provide the required quantities.	• We are committed to reviewing new ideas and this is especially important given the water stressed nature of the South East. We will consider the viability of these proposals further as part of the development of the revised Regional Plan and our revised draft WRMP. • We are meeting to discuss these proposals with a group representing housing developers in October 2022. We have also discussed the acceptability of the proposals with the Environment Agency
Member of the public	**Conclusion** There are at least four critical objectives and unfortunately this plan meets none of them. • Provide a continuous high quality water supply with no restrictions. • Keep customer charges as low as possible • Meet the low carbon target • Help improve the environment	• We encourage a further review of our draft WRMP24 which aims to meet these objectives.
Member of the public	At first site there appears to be some contradiction in these objectives, but this is only true if the industry continues with the current abstraction strategy based upon the statement that there is insufficient water in the local environment. This forces you to seek alternative sources, all of which require the use of high amounts of electricity and by association emit hundreds of thousands of tonnes of Carbon Dioxide. My proposal shows there is sufficient water in the local environment and I have devised methods of making it available.	• We are committed to reviewing new ideas and this is especially important given the water stressed nature of the South East. We will consider this further as part of the development of the revised Regional Plan and our revised draft WRMP
Member of the public	I believe the only way to solve this problem is to use the surplus water currently flowing into the estuaries which will make available more than is required. This will give the opportunity to avoid future water restrictions, enable customers to receive the water they desire (but still use water wisely), enable the recovery of the aquatic environment and prevent the emission of hundreds of thousands of tonnes of carbon dioxide.	• We are committed to reviewing new ideas and this is especially important given the water stressed nature of the South East. We will consider this further as part of the development of the revised Regional Plan and our revised draft WRMP

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Member of the public	I have recently read the Thames Water report 'Developing a regional plan for the South East' and I note that it refers to a transfer of water to Southern. I thought it worth a comment to you as Southern will inevitably have to contribute. Thames Water proposals for solving the water shortage in the South East will have an effect on Southern Water costs and charges to customers. In additional every proposal will use large amounts of electricity and emit hundreds of thousands of tonnes of carbon dioxide into the atmosphere. These large, expensive schemes become necessary only if you assume there is no additional water available from the River Thames. I believe this is an incorrect assumption. As Southern will be contributing to the scheme, the result will be a large increase in Southern Water customer's bills. As I said in my previous response, if there was no water to be had, the UKTAG Report, UK Standards and Conditions, would, at Pages 50 on, simply say there is no possible reduction in flow to the sea. In fact the report states that, dependent on quality and sensitivity of the estuary, the flows can be reduced by at least 50%. Al the schemes proposed by Thames Water have a total reliance on using huge amounts of electricity. The costs of the water produced will increase way beyond anything today	• We are committed to reviewing new ideas and this is especially important given the water stressed nature of the South East. We will consider this further as part of the development of the revised Regional Plan and our revised draft WRMP
Portsmouth Water **Pre-consultation letter** **April 2022**	I would like to take this opportunity to recognise the value of the existing, and future collaboration and dialogue between our Companies. As well as ongoing operational dialogue about existing bulk supplies between our supply areas, we also collaborate regionally through the Water Resources in the South East (WRSE) alliance. Working regionally together continues to support the progress of the Havant Thicket reservoir and the development of a regional multi-sector resilience plan for water resources	• We believe collaboration with neighbouring water companies is vital for a well-functioning and effective water supply. It benefits both customers and the environment.
Portsmouth Water	To quantify benefits that could be achieved by future supply options developed through the WRSE process, we have agreed to cooperate on a joint PyWR model of our water resources systems. This model will consider how our conjoined supply areas will perform under a range of normal and increasingly severe drought events. It will determine the benefits of supply options feeding and drawing from the Havant Thicket reservoir, as well as the conjunctive use benefits of these options when used at the same time as the Havant Thicket 'classic' scheme which already has planning permission. Annex A to this letter has a Table of schemes that impact both our supply areas that has been shared and agreed by email by both our companies in recent months. It sets out the current best understanding of shared options and has been used by both Companies to ensure a consistent, agreed, and auditable source of data for the recent WRSE data update. For several options, pipe transfer capacity has been used in the absence of deployable output – this information will be improved upon using the results of a future joint PyWR model	• We have presented this information consistently in our plan
Portsmouth Water	Working together, we have delivered benefits for reliable and sustainable water resources for our customers. I look forward to continuing this successful collaboration.	• We believe collaboration with neighbouring water companies is vital for a well-functioning and effective water supply. It benefits both customers and the environment. • Our dWRMP24 has been prepared in close partnership with neighbouring water companies.
Salmon and Trout Conservation **Pre-consultation letter** **March 2022**	Environmental impact of delay to reduce abstraction between 2027-30. Best measures should be put in place as soon as possible. Do not want formal alteration of 2019 plan. Transparency and clarity of optioneering process, supply demand balance. Alternative back up proposals should come forward is the preferred option is delayed or not taken forward.	• We have included greater clarity on our decision-making process, timeline and prioritisation in the dWRMP24.- see s6 and s9 of the Tech Report • We have no plans to formally alter WRMP19
Ofwat	**Starting SDB Position (1)**	• The WRMP19 Final Planning supply demand balance (SDB) includes the DO benefit from a number of options which are excluded from the

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First pre-consultation letter **February 2022**	The starting position for the WRMP24 supply and demand balance needs to be clearly and robustly justified. Any significant difference at the beginning of the WRMP24 planning period to the final plan WRMP19 2024-25 year figure should be explained. (As per WRPG sections 6.2 & 6.4). 80Ml/d surplus at end WRMP19 2024-25 to >100Ml/d deficit 2024-25 WRMP24 identified in data tables please feedback on the reasons for this including transparency where options are not on track.	baseline WRMP24 SDB, most notably the benefit of demand restrictions and drought permits and orders. • These were included as options rather than in the baseline SDB, consistent with WRPG (Jul. 2021 version) at the time. This amounts to ~124.5Ml/d in our Western area, 26.6Ml/d in our Central area and 26.1Ml/d in our Eastern area. • Consistent with the updated WRPG (Dec. 2021 version), AMP7/AMP8 funded options have now been included in the baseline supply forecast rather than as options. • Other elements of the baseline SDB have also been updated including the supply and demand forecasts
Ofwat	**Starting SDB Position (2)** Provide reassurance that non-RAPID options are being progressed with the same pace and commitment for delivery as options within the RAPID gated process.	• Non-SRO schemes are being progressed at pace. Meeting was held with the Environment Agency on 6 April 2022 to provide a programme update, to discuss delivery risks and to discuss ongoing regulatory engagement. • We have committed to provide regular RAG status updates on delivery progress
Ofwat	Ensure funded options are included within the baseline and not re-appraised (ref WRPG 4.8); for example you presented that Shoreham desalination is being selected in decision making when, as a funded option, it should be included within the baseline supply demand balance.	• AMP7/AMP8 funded options are included in the baseline for the draft Best Value Plan and therefore they are also reflected in the dWRMP24
Ofwat	**Consistency between WRMP24 and PR24** Some WRMP targets are expected to directly inform business plan performance commitments (e.g. leakage) so should be developed in that context remaining consistent between your WRMP24 and PR24 business plan submissions. (As per WRPG sections 1.6 and 8.3.1).	• We intend to fully align our WRMP24 targets with our PR24 performance commitments. • Our WRMP24 team is represented in the PR24 programme team.
Ofwat	**Costs of options (1)** Cost of options presented in the WRMP should be the cost of delivering the full WAFU benefit and demand reduction (As per WRPG section 8.3.1).	• Our cost estimates for supply-side options cover the cost of delivering full WAFU. For PCC reduction, we have not included the cost of smart metering in our dWRMP24 as we have assumed that to be a part of our current deliverables. However, we will revise that for the revised draft WRMP.
Ofwat	**Costs of options (2)** Ofwat will focus on the costs and decision-making evidence more broadly as presented in WRMP24 and provide comment where necessary. Robust and efficient costs are important to have confidence in option decision making. Due to the timescales and governance around the WRMPs and how they interact with business plans and the price review process the costs presented at the WRMP24 stage are expected to be the same as those submitted into business plans at PR24. (As per WRPG section 8.3.1).	• WRMP option costs have traditionally been high level in recognition of the fact that it is a strategic plan developed from a large pool of feasible options which have not gone through detailed design. • We have engaged our Engineering and Costing teams to review the design costs of options selected by the regional investment model to make sure they are appropriate. • We have also carried out a review of all the high cost/high impact options (desalination, recycling, storage) that are selected for delivery by 2050 in the draft regional plan.

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		• This work was carried out over summer 2021 and updates will be fed into the revised draft regional plan and revised draft WRMP. • We will ensure these updated costs are reflected in the business plan submission.
Ofwat	**Options assessment** Options where companies seek funding at business plan stage should have all known environmental and drinking water quality risks identified and mitigations costed in. Alternative options should be available in the case where further investigations reveal a showstopper. (As per WRPG section 8.3.1 and section 5.12).	• We will review the design and costings of candidate preferred options to incorporate mitigation of known environmental and drinking WQ risks based on latest assessments • These costs will be used in investment modelling for the regional plan and reflected in the WRMP24 and business plan • This option design and costing workstream will be carried out as part of our PR24 programme • Sensitivity testing for the investment modelling workstream will determine the alternative options which will be pursued if showstopper issues arise
Ofwat	**Demand Reduction (1)** We are expecting companies to make significant effort on demand reduction and to set out efficient glide paths to 110l/h/d per capita consumption and 50% leakage reduction by 2050 with water company actions. Southern Water's demand management targets, PCC target 100 litres per head per day by 2040 and 62% leakage reduction by 2050 are ambitious. Whilst it is important to meet ambitious policy targets, there is a need to ensure that the plan is not overly constrained and that the plan is optimal and best value over the long term. Please provide confidence that these targets are deliverable through efficient glide paths.	• Given the scale of challenges we face in reducing abstractions from rivers and groundwater and the lack of suitable alternatives apart from high cost/high impact options such as desalination, recycling etc., we need to rely heavily on demand management to maintain supply-demand balance. • However, we recognise the deliverability challenge associated with demand management; especially where behaviour change is critical in achieving targets. We have been reviewing our demand management targets over the summer as reflected in this submission.
Ofwat	**Demand Reduction (2)** Please provide details of how you are making a step change in demand management options for WRMP24 compared to WRMP19.	• We are looking at emerging technologies, in addition to the traditional methods of leakage reduction, to reduce leakage in WRMP24. Our PCC reduction strategy in underpinned by smart metering to provide more granular information for better targeting of water efficiency measures and messaging. Further work was undertaken over the summer to review our options especially in view of the COVID-19 impact on demand and potential changes to working patterns post COVID-19.
Ofwat	**Best value demand reductions** You should consider the best value approach to the delivery of demand reductions for your region and explain how you are managing the uncertainty regarding delivery. (As per WRPG sections 9 and 10).	• WRSE has looked into the implications of a heavy reliance on demand management to achieve a supply-demand balance across the region and the risks and uncertainties associated with it. • We have considered scenarios where we achieve the national framework demand management targets and where we achieve the more ambitious T100 target that was included in WRMP19 as well as 62% leakage reductions

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Ofwat	**Reliance on Government policy to achieve demand reductions** Where your future initiatives to reduce demand are reliant on government policy, we ask that you clearly articulate which policies your assumptions rely on, and your assumed dates of implementation.	• We have assessed the impact of government policy on domestic demand management. Our analysis shows that the main impact of government policy will be on the cost of achieving Target 100. It will cost less - and would make it easier - to achieve Target 100 but will not necessarily push PCC to below 100 l/h/d by 2040. We have assumed water labelling to be in place by 2030 but have not relied on any other government intervention to achieve Target 100.
Ofwat	**Sensitivity to when 1-in-500 year drought resilience is achieved** Sensitivity should be undertaken around the year in which plans aim to meet the 1-in-500 year level of drought resilience as per the WRPG, to identify if there are any significant cost savings that could be achieved. This includes aligning the timing for meeting the drought resilience levels with achieving the demand targets of 110l/h/d per capita consumption and 50% leakage reduction by 2050. This may highlight that the resilience levels can be met though demand saving and offer a better value alternative. (As per WRPG sections 4.7, 9.2 and 10.3). Where your future initiatives to reduce demand are reliant on government policy, we ask that you clearly articulate which policies your assumptions rely on, and your assumed dates of implementation.	• WRSE is undertaking sensitivity testing around the timing of achieving the 1 in 500 level of drought resilience (looking specifically at 2035, 2040, 2045 and 2050) • As mentioned previously, we have assumed that water efficiency labelling of water-using devices will be in place by 2030. We have not considered the impact of any other government policy on demand reduction.
Ofwat	**Environmental Destination** We understand that there is still uncertainty around your environmental destination scenarios and ongoing discussions with the Environment Agency to finalise. We recognise that the selection of scale of ambition and timing to deliver is an iterative process as it needs to take account of the costs and benefits of solutions to deliver any abstraction reductions. The potential environmental impacts of any solutions to meet the environmental destination scenario are also expected to feed into the process. We would expect the wider environmental costs and benefits across all areas of your business plan to be taken into account when setting this destination to ensure the maximum environmental benefit is delivered for the proposed investment at a company level. Please can the final scenarios be presented to us once available. (As per WRPG section 5.4.2).	• We have continued to work with WRSE and the Environment Agency to refine our environmental destination. • The WRSE best value planning approach takes account of wider environmental costs and benefits of options to replace lost DO. • Our final Environmental Destination scenarios are presented in Annex 9; • The wider environmental costs and benefits across all areas of our business plan will be considered as part of PR24.
Ofwat	**Target headroom** Headroom is expected to reduce in the longer term as uncertainty is absorbed into the adaptive planning approach. Headroom will remain for absorbing short term uncertainties with the adaptive planning approach remaining for longer-term uncertainty. You should ensure you are not double-counting uncertainty as per the WRPG. (As per sections 5.5, 7 and 10.8). We understand that further work is planned to develop the approach to target headroom and please can you provide more information to us on the approach at the next meeting.	• We have applied the WRSE approach to develop a target headroom profile consistent with adaptive planning. This reduces the uncertainty components included within target headroom at the two branch points: • At 2040 uncertainty in the demand forecast (D2) is removed • At 2060 uncertainty in the impact of climate change on supply (S8) and demand (D3) are also removed
Ofwat	**Adaptive pathways** The choice of adaptive pathways and trigger points should be made based on the uncertainties and drivers of the uncertainties at that time. It should be clear why a date has been selected for a pathway to diverge and the sensitivity to the investment programme by changing this date. We consider robust adaptive planning as a more sophisticated way of managing known uncertainties than lumped target headroom. (As per WRPG section 10.8). You have identified that WINEP outcomes in the 2030s to 2040s could result in large changes in supply availability and that there is still uncertainty around timing; this should be explored further	• Alongside WRSE we have tested sensitivity scenarios as to when the Environmental Destination, including WINEP outcomes, will be delivered. • We have continued to refine our Environmental Destination and WINEP outcomes in discussion with WRSE and the Environment Agency.

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Ofwat	**Best value plan** Plans should compare the cost of the best value plan to the least cost plan. The difference in expenditure should be clearly stated and cost drivers fully explained. (As per WRPG section 10.4).	• Our draft WRMP24 is a best value plan aligned with regional draft best value plan.
Ofwat	**Impact on bills** It is important that you clearly identify the bill impacts of your proposed programme and engage with customers on this issue. (As per WRPG 4.1.1).	• We have incorporated the impact upon bills of our dWRMP24 – see s7 of the Tech Report
Ofwat	**Multi-sector needs** We understand that addressing multi-sector needs is an objective of regional plans. We see benefit from a customer perspective in developing multi-sector options as this should result in a broader more resilient set of options where other sectors are contributing to the costs. The focus of WRMPs should remain planning for public water supply. (As per WRPG section 6).	• WRSE has considered the impact of non-PWS demand on the regional plan – the other sectors stated that almost all their projected growth in demand could be met within licence headroom so minimal need to develop multi-sector options • Our dWRMP24 submission is focussed on investment required for public water supply needs only. • The licence capping policy could have a significant effect on other sectors as well as water companies which will require multi-sector options to be considered. One option being considered is to develop a PWS only regional plan and a secondary plan that incorporates multi-sector needs.
Ofwat	**Level of base and enhancement investment** We would welcome early sight of your proposed draft level of investment (£m for 2025-30 and beyond) in terms of base and enhancement expenditure prior to draft WRMP24 submission. It would be beneficial if you could show the impact of key drivers such as environmental destination choice (in terms of scale and timing). (As per WRPG sections 10.6 and 10.8).	• We have included the assumed Totex investment profile by AMP in s7 of the Tech Report
Ofwat	**Reference scenarios** There is a need for you to fully consider how Ofwat's long term reference scenarios will be included as part of the best value adaptive plan assessment.	See comment above on the reference scenarios
Ofwat	**Drought resilience glidepath** Your plan should ensure the glidepath for levels of service for drought resilience (emergency drought orders) are optimal at the company and water resource zone level (noting current reduced levels of service in Sussex North in the central area) and are not just aligned to the company level without clear justification for why.	We have undertaken a study to confirm the level of service in Sussex North as a result of short-term supply demand challenges. The Level of Service which our plan delivers is presented in s4 of the Tech Report. We have presented a sensitivity runs to examine the timing of meeting 1-in-500 year resilience in s7 of the Tech Report.
Ofwat	**Sensitivity to drought permits and orders** Sensitivity analysis should be carried out to understand the impact of including or not including drought permits and orders on the best value plan and to test the strategy to move from not including drought permits and orders under 1 in 500 resilience by 2040.	We have presented a sensitivity run to test the timing of when we stop relying on drought permits and orders in the 1-in-500 year drought scenario
Ofwat	**Sussex North** Water neutrality within Sussex North should not be considered as a driver or a policy in the plan as it is a requirement to ensure new housing growth does not add to abstraction – there is a need to look at where there is opportunity to link this requirement to achieving demand management ambition. We were not expecting water neutrality to be a permanent (or even medium term) solution but if you are planning to use water neutrality as an option to meet the supply-demand balance in WRMP24, it	We have an ambitious PCC reduction programme (T100) but we have not explicitly considered water neutrality as an option to maintain supply-demand balance. We are actively working to support water neutrality to protect the environment and support housing growth but

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	should be fully and rigorously appraised in the same way as other options according to the WRPG and shown to be best value.	seeking a resolution to the requirement by defining a sustainable abstraction regime.
Ofwat	**Network** You presented that an improved supply network is part of your strategy to improve resilience to customers. If sub-WRZ resilience schemes are planned to feature within the WRMP – you should consider and justify schemes that are 'non-drought resilience only' and do not contribute to the supply demand balance via a resilience request in the business plan however these options can be described in the WRMP. To be considered as WRMP schemes they should have some benefit to / impact on one or more components of the supply demand balance, as per WRPG sections 8.2.	Our options set for the draft regional plan investment modelling does not include any options that offer a resilience benefit only without contributing to the supply-demand balance. All 'resilience only' options were screened out from the feasible list of options. We therefore have no plans to include these in the WRMP24, but they may feature in our PR24 business plan.
Ofwat	**Board engagement** Please ensure you are meeting the full expectations of the WRPG regarding Board engagement and assurance of your plan, as per sections 1.5 and 8.3.1 in the WRPG. This will be one of the key elements we ask you to confirm and explain at our next meeting.	The Southern Water Board agreed to establish a Sub-Committee to oversee Board engagement for the whole WRMP24 process. This included producing the assurance statement as required by the WRPG. Several meetings of the Sub-Committee have been held and engagement will continue through to the final plan.
Ofwat	**Risk Management** For our next meeting, please can you clearly explain the level of immediate risk that you face and your risk management process around ensuring continuity of supply in the near term in light of this risk level	Our WRMP19 planned resilience to drought interventions was one of the highest in the industry (we already planned to 1 in 500 year resilience to L4 restrictions in all planning scenarios) In AMP7 and AMP8 (Western area only) we planned for a reduced level of service whilst long term schemes were delivered (as set out in Annex 1 to fWRMP19) In AMP7 we have acted responsibly to minimise the risk to designated sites in Sussex North WRZ which has affected scheme delivery and level of service We have a mitigation plan to manage the supply-demand balance risks to customers and the environment if a drought were to occur which is shared with the Environment Agency and Natural England on a quarterly basis
Ofwat	**Alignment with Portsmouth Water** You should continue to collaborate with Portsmouth Water and ensure the two companies' WRMPs are aligned regarding transfer volumes and operational agreements, especially during drought situations.	We continue to work closely with Portsmouth Water and have recently completed a joint drought triggers project to better understand the interaction of our drought interventions in Western area to support our drought plan update. We also commissioned a joint project to provide enhanced water resources modelling of SRO options in Hampshire to help us refine the design of the Havant Thicket SRO and allow us to explore how other SRO options (e.g. T2ST) will interact in the Western area. We are also collaborating with other companies in the South East to ensure an optimal regional strategy and best value for customers e.g. we have worked with South East Water to further develop the Brighton WTW recycling option;

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Ofwat **Second Pre-consultation letter** **June 2022**	Some progress has been made since we last met in January, but we are concerned that there is an emerging risk that the plan submitted at draft stage **will not be compliant from a statutory and regulatory perspective**	Addressed in this (October) submission.
Ofwat	As a priority action we expect you to **communicate any reduced level of service with customers** and robustly and transparently report your level of service within your annual reviews and WRMPs going forward.	Addressed We have set out the LoS that the plan provides in s4 of the Tech Report.
Ofwat	…as of the date of the pre-consultation meeting there was still **a lot of work to do to produce a draft plan which is compliant from a statutory and regulatory perspective**. We are concerned about the risk this may bring to robust and timely delivery of the draft plan and a meaningful consultation at draft stage (required as per WRPG section 3.6).	Addressed We have undertaken a thorough assurance to ensure the plan is compliant.
Ofwat	We are concerned that your **WRMP team is not sufficiently resource**d to develop the WRMP and to feed in to WRSE.	Addressed Additional resources brought in to support the October submission as per the WRMP Roadmap
Ofwat	…you will not be able to produce a best value plan until the end of the year, which is **after the other WRSE companies** (a best value plan is required as per section 9 and 10 of the WRPG)	Addressed Our plan is now best value
Ofwat	…include the benefits of funded schemes as options rather than incorporated into the baseline (**funded options should be included within the baseline** and not re-appraised as per WRPG section 4.8)	Addressed Funded options are included in the baseline
Ofwat	…include **national level rather than locally informed and revised environmental destination scenarios** (required as per WRPG section 5.4.2	Addressed See Annex 9
Ofwat	fail **to incorporate Ofwat's common reference scenarios** in your draft plan (required as per WRPG section 10.8).	Addressed We have set out our approach to adaptive planning in s5 of the Tech Report and this describes how the situations selected for the regional plan investment modelling align with Ofwat's scenarios. E.g. situation 9 is Ofwat's minimum scenario.
Ofwat	Your baseline water resources planning scenarios should include the **benefits of non-supply demand balance solutions** such as capital maintenance (as per WRPG section 4.8).	Addressed We have confirmed our approach to managing outage includes capital maintenance investment when required
Ofwat	…with the incorporation of adaptive planning into your WRMP we expect that the **target headroom** component of the supply-demand balance **should reduce** (as per WRPG section 7).	Addressed The Target Headroom is adjusted down to avoid
Ofwat	You should include detail within your WRMP annual review 2021-22 and your draft WRMP24 of how recent actual [demand reduction] data is informing uncertainty and strengthening confidence that these targets are deliverable. This should include improved **understanding of demand following the Covid-19 pandemic**.	Addressed We have produced a revised demand forecast and undertaken a sensitivity test using it. We have shown the impact of Covid on demand management and reflected the risk of delivery.
Ofwat	Southern Water could explore scenarios where water resource zones reach this [**1-in-500**] level of drought resilience at different times and identify the **best value date of achievement for each zone** (as per WRPG section 4.7).	Addressed Our BVP aims to achieve resilience to 1:500-year droughts by 2041. We have tested scenarios where this is achieved earlier (in 2037) and later (2052) than planned. See s7 of the Tech Report

Respondent	Feedback	Response
Ofwat	We are expecting to receive an updated and fully completed pre-consultation data table… These **Ofwat tables should be submitted to us in advance of and in addition to the WRMP data tables** that you will submit alongside your draft WRMP	Addressed We are submitting these in addition to WRP tables.
Ofwat	You should provide **clarity around ongoing options appraisal work and how additional options will feed into the company WRMP**, regional plan and regional reconciliation processes in a robust and timely manner to inform the draft WRMP24 and how this has been allowed for within your consultation process	Addressed We have undertaken an options deliverability assessment and set out next steps as to how this will influence options appraisal for the next iteration of the plan.
Ofwat	We are concerned that costs **within the draft WRMP24 may not be sufficiently robust and efficient** and will not have all known environmental and drinking water quality mitigations costed in which could dampen confidence in decision making and consultation, (see WRPG section 5.12 and 8.3.1) We reiterate Ofwat's expectation that costs presented in water resource management plans should be the same as those submitted for the PR24 price review (as per WRPG section 8.3.1	Addressed Our deliverability assessment has considered the robustness of scheme costs. We are committed to ensure consistency with PR24.
Ofwat	Cost of options presented in the WRMP should be the cost of delivering the full WAFU benefit (as per WRPG section 8.3.1). You noted **that for delivery of PCC improvements you will not include the cost of smart metering** within the draft WRMP24 as you have assumed currently that this is part of base.	Addressed Costs of delivering the full benefit of options has been included.
Ofwat	In a recent '**Hampshire Water Transfer and Water Recycling'** solution checkpoint meeting with Portsmouth Water you stated that that the **deployable output for this option in the draft WRMP24 will be incorrect** as the assumptions in the WRSE emerging regional plan were incorrect…the fact that these values will be incorrect at draft will have a negative impact on decision making at this stage (ref WRPG section 8.3 for option required for each option).	Addressed The benefit of this scheme is consistent between the SRO and the draft Regional Plan and dWRMP24.
Ofwat	Ofwat expect companies to develop and present as part of their draft WRMP a monitoring plan which allows **tracking of progress against the best value adaptive plan**	Addressed A monitoring plan has been developed and has been included as an Annex.
Ofwat	We are disappointed that you have **not been able to present to us a provisional draft best value plan** or results at pre-consultation meetings we have held with you. This has limited the depth of feedback that we have been able to provide to you at the pre-consultation stage.	Noted

2. WRSE-specific Feedback

Respondent	Feedback	Response
Environment Agency – WRSE Provisionally Selected Options – Southern Water Environment Agency Feedback	**General comments** More info needed on options including: • Transfers – sources of water and net abstraction increases? • Pipeline routes • Abstraction and discharge locations (map please!) • Monitoring planned/underway • INNs consideration (use of open or closed bodies of water when transferring water) • Catchment scheme details (will these be set out in WINEP?) Not clear on which options contribute to grid upgrades (e.g. Romsey & Broadlands?) • Lack of clarity/consistency around inter-company transfers • SESW – is something included in baseline but not consulted on? • PWS – 9Ml/d PWC Source A in WRSE options list but not in data tables • Joint schemes – clear agreements and responsibilities on joint delivery essential, including catchment schemes	Option fact files have been included in Annex 13 providing further details of options.
Environment Agency – WRSE Provisionally Selected Options – Southern Water Environment Agency Feedback	**Test ASR** ASR in the Test area has never been previously explored and there is limited knowledge about the characteristics of the confined Chalk aquifer in this area. On that basis, we would suggest that the successful delivery of a scheme yielding up to 15Ml/d is extremely uncertain. Experience from drilling boreholes in similar areas nearby suggests that the chalk is likely to be poorly developed in this area with poor water quality offering limited opportunities for a successful ASR scheme. Recommend that this is removed from model as a 15Ml/d Scheme.	We acknowledge the uncertainty with this scheme. As clarified during pre-consultation the 15Ml/d capacity was incorrect (transcription error). The revised yield is up to a maximum of 5Ml/d. The updated option has a maximum capacity of 5.5Ml/d. The earliest start date has been pushed back to the 2040's which will give us time to further investigate the viability of this option. We are exploring if it is possible to conduct some early investigations into scheme viability.
Environment Agency – WRSE Provisionally Selected Options – Southern Water Environment Agency Feedback	**Raw water Transfer between [redacted] WSW and River Test lakes – 60Ml/d.** Challenges with blue green algae – particularly with dry weather. Understand River Test lakes isn't a storage facility. Large River Test lakes – understand isn't designed as isolated storage reservoir. Therefore we think there could be significant work required to isolate and line River Test lakes. What is the capacity? How long would this be stored for? We need additional information – where the water would be coming from?	This option is no longer selected in the draft Regional Plan and dWRMP24
Environment Agency – WRSE Provisionally Selected Options – Southern Water Environment Agency Feedback	**Romsey BHs and Newchurch BHs** Romsey and Newchurch appear to increase abstraction over and above recent actual, albeit still within licences. Environment Agency concerns around the inclusion of schemes that increase reliance on chalk aquifers. Need further information to comment in detail. We believe the company was looking into a 40 % reduction in the list of licences for reduction / modernisation shared with the Environment Agency. Is that still planned? Romsey has a WFD no det INV due 31st March 2025. Action to raise DO that could effect CSMG compliance would have implications for Test. Newchurch has been taken off the WINEP (major alteration form, July 21) as was indicated no potential for growth. If there are plans for growth they will need to do a WFD no det investigation before abstraction is possible.	The emerging outcome from our CSMG investigation has shown that the reach adjacent to Romsey is presently compliant to CSMG and EFI targets. We will further evaluate and validate this through our AMP7 No Deterioration investigation. Our licence modernisation programme is still ongoing. We acknowledge that a No Deterioration investigation would be required to progress the Newchurch scheme and are currently preparing to scope a study for the Isle of Wight Lower Greensand which would include consideration of this scheme.
Environment Agency – WRSE Provisionally	**Recommission Gravesend source**	Raw water quality will be an important consideration of treatment design during re-commissioning of this

Respondent	Feedback	Response
Selected Options – Southern Water Environment Agency Feedback	Gravesend abstraction from chalk in NE of Darent – at expense of GW flow to Tidal Thames and possibly Shorne Marshes. Gravesend is a Safeguard Zone and subject of a PR19 catchment scheme run by Southern Water. Comments indicate nitrate was linked to a monitoring problem, the fact Southern Water are currently implementing a catchment scheme suggests there is a real issue with WQ. Lessons learned from this will have to be incorporated to the assessment of this WR proposal, as there may be treatment constraints and there will be a need to understand the impacts of renewed, or indeed increased, abstraction on current pollutant trends, particularly due to the paucity of data caused by the source being out of service for so long. GWCL – Historically there was a question as to whether the abstracted (raw) groundwater also had other contaminants present, specifically solvents, so a full assessment of groundwater quality will be required to determine future treatment options and proposals. Groundwater quality may influence deployable output	source. We will need to undertake further monitoring to understand the water quality challenge. We currently have a number of active catchment management schemes as part of our Catchment First programme within the North Kent Chalk aquifer with the aim of improving future groundwater quality by the time this scheme is required (2040s). We will also consider deterioration risk as part of our ongoing No Deterioration Investigation into the North Kent Chalk
Environment Agency – WRSE Provisionally Selected Options – Southern Water Environment Agency Feedback	**Horsham, Littlehampton, Woolston and Portswood re-use scheme** Littlehampton – questions around abstraction proposals and discharge point. Note review of Tidal Arun licence and wider investigation. Studies needed to determine water lost at all points in system if piped/discharged to Rother All schemes – WQ assessments required to understand impacts of discharge and overall nutrient loading. Capacity at storage at Pulborough (75 ML) would seem to be an issue. Algae common too. How would Storage at Pulborough be managed? Has River Adur Offline Reservoir been considered? Has Southern Water consulted DWI around proposals? Quantity available for abstraction will be dependent licence constraints, regardless of how much is discharged upstream. Woolston/Portswood – Important that discharge is coming through river. Is this to enable additional abstraction or secure existing DO at PWC Source A?	We recognise the scale and technical complexity of many of the preferred options in the Regional Plan and dWRMP24 present a number of challenges. We have undertaken a Scheme Delivery Assessment to better understand the risk of delivery of these water recycling options. This has concluded the need for a significant amount of early pre-planning work and enabling studies,
Environment Agency – WRSE Provisionally Selected Options – Southern Water Environment Agency Feedback	**Medway and Hastings WTWs schemes** Medway WTW – comments previously provided. • Serious concerns around Medway discharge. • Eccles Lake – If Eccles Lake is in the Folkestone Beds principal aquifer and any discharge of treated effluent could be considered disposal of effluent to groundwater. This would need to be assessed via waste and water legal and is likely to require an environmental permit. • Disappointed around lack of join up between Southern Water & SEW. Hastings WTW – is discharge direct to Darwell? • Darwell isn't offline and has comp flow – need to understand contribution to reservoir storage and impacts to outflow. Note past suggestions around redirecting spring flows and taking Darwell offline.	We recognise the scale and technical complexity of many of the preferred options in the Regional Plan and dWRMP24 present a number of challenges. We have undertaken a Scheme Delivery Assessment to better understand the risk of delivery of these water recycling options. This has concluded the need for a significant amount of early pre-planning work and enabling studies, which we are adding to the programme. See Tech Report s6 + s9
Environment Agency – WRSE Provisionally Selected Options – Southern Water Environment Agency Feedback	**Desalination – Shoreham, Isle of Sheppey, Thames estuary, East Thanet** Shoreham – Location wise this option will pose less risk than options discharging to the Solent or Langstone Harbour. Need to understand any impacts to existing projects and constraints within Solent. May be existing modelling from previous industrial use. General: Outfall for hypersaline effluent – dispersal impact studies and modelling needed, considering seabed floor features (accumulation risks). Note – 3 individual desal plants proposed on North Kent coast – is this best value solution, has feasibility of larger single site been considered? Is there join up with SEW? In-combination impacts also need to be considered. Thames – note estuary is highly protected therefore significant issues if water taken from estuary itself. Additional information around source of saline/brackish water and hypersaline discharge locations needed.	We recognise the scale and technical complexity of many of the preferred options in the Regional Plan and dWRMP24 present a number of challenges. We have undertaken a Scheme Delivery Assessment to better understand the risk of delivery of these desalination options. This has concluded the need for a significant amount of early pre-planning work and enabling studies, which we are adding to the programme. See Tech Report s6 + s9.

Respondent	Feedback	Response
Environment Agency – WRSE Provisionally Selected Options – Southern Water Environment Agency Feedback	**River Adur Offline Reservoir** Area hydrologists currently considering the water availability for filling the reservoir. Potential impacts on water quality if dilution is reduced which may have WFD implications. Assessment required. Dates for construction seem quite ambitious given that (to our knowledge) no work has begun on this option in great detail. Look at lead in time for Havant for comparison.	We recognise the scale and technical complexity of many of the preferred options in the Regional Plan and dWRMP24 present a number of challenges. We have undertaken a Scheme Delivery Assessment to better understand the risk of delivery of River Adur Offline Reservoir. This has concluded the need for a significant amount of early pre-planning work and enabling studies, which we are adding to the programme. See Tech Report s6 + s9.
Environment Agency – WRSE Provisionally Selected Options – Southern Water Environment Agency Feedback	**Raising Bewl by 0.4m** We have feedback comments previously. Raising Bewl by 40cm is only providing 3 Ml/D, how much infrastructure change is required? Questions around filling and output? Note pumping rates impacted by eels regs – how does this tie in to resilience? What would the habitat loss on margins of reservoir? Potential harm to protected or nationally rare species around the margins of reservoir. Loss of ancient woodland – Mitigation is not possible for the loss of ancient woodland so compensatory habitat creation would be required. Worthwhile carrying out survey on reservoir capacity considering desilting activities. Environment Agency suggest desilting is considered alongside/as an alternative scheme. Discussions around emergency release procedures – need to be taken into account.	We have produced a fact file (Annex 13) for this option which provides further details but also recognise the need for early pre-planning work and enabling studies which we are adding to the programme. See Tech Report s6 for outline of further options development work needed. We are committed to reduce reliance on drought options and from 2041 we have not included them in the dWRMP24. In the meantime we will continue to engage with Environment Agency and Natural England to develop and implement our mitigation programme (a project has been established to progress this).
Environment Agency	**Interzonal transfer pipeline from SEW Barcombe WSW to Southern Water Rottingdean WSR 20Ml/d** Need to check pipeline route.	Outline schematics are included in our option dossiers (Annex 13).
Environment Agency	**Worthing to Brighton: 20Ml/d** Could it be impacted by outcome of WINEP investigations? Is 20Ml/d the capacity presumably not the DO?	It is correct that 20Ml/d is the capacity, our investment modelling has taken account of potential reductions in deployable output at a WRZ level when determining transfer utilisation.
Environment Agency	**Pulborough winter transfer Dummy Resource : Stage 2** We are not sure what this is.	This scheme was selected in our WRMP19 and at a high level involves the development of additional transfer capability within the Brighton block. This would allow sources to operate more flexibly, to maximise use of the limited groundwater storage for a small DO benefit by using extra winter flow from Pulborough.
Environment Agency	**Portfolio 1 (Standard): Adur and Ouse** Generally supportive though note won't provide DO. More info on schemes would be welcome.	We have included further information in the dWRMP24 on catchment options (s5 of Tech Report and Annex 9)
Environment Agency	**Havant Thicket To Pulborough WTW: 50Ml/d** Not clear how this quantity will be supplied given the large deficits in Hampshire. Is this dependent on Thames / Southern Transfer? Pipeline route would need consideration and Natural England input. Does the scheme provide 50Ml/d to Sussex North or is the intention for this to be bi-directional? Could be an INNS risk here that would need consideration. Also potential for change in water chemistry.	Dependent on additional supplies to Hampshire from T2ST. Reviewed as part of our Scheme Delivery Assessment to better understand the risk of delivery. This has concluded the need for a significant amount of early pre-planning work and enabling studies, which we are adding to the programme. See Tech Report s9.
Environment Agency	**Pulborough surface water (Phases 1 to 3) Drought Permit/Order (2025 onwards** We have concerns with drought permits/ orders being used in the S/D balance beyond the short term. Would want to understand under which scenarios these would be used and the frequency of needing a level 3 order (which poses a greater risk to the environment). Monitoring and mitigation packages need	We have committed to reduce reliance on drought options and from 2041 we have not included them in the dWRMP24. In the meantime, we will continue to engage with Environment Agency and Natural England

Respondent	Feedback	Response
	to be put in place in advance and agreed with the Environment Agency and Natural England – they are currently not considered complete.	to develop and implement our mitigation programme (a project has been established to progress this).
Environment Agency	**River Adur Offline Reservoir** Conversations with area hydrologists suggest that there may be potential for this water to be available, though would need to see the modelling undertaken to confirm this. There may be potential impacts on water quality if dilution is reduced which may have WFD implications. Not necessarily a showstopper at the moment, further info and analysis needed. The site itself does not sit in a natural valley so significant construction would have to be undertaken in a small rural area so likely will come across resistance for securing planning permission. Option should remain for now. Dates for construction seem quite ambitious given that (to our knowledge) no work has begun on this option in great detail. Look at lead in time for Havant for comparison. A lot more work needed urgently on this if it is to be a favoured option.	See response above to comments on this option.
Environment Agency	**Littlehampton WTW Recycling Conjunctive use with storage at Pulborough – 26Ml/d** Would you be proposing to abstract water for blending with the recycled water? If so, would this be at the Tidal Arun abstraction? Or would water go directly into Storage at Pulborough? Dependent on the renewal of the Tidal Arun licence and wider Arun Valley sustainability investigation. WQ assessments would be required to understand the quality of water being discharged into the river system and how this impacts the overall nutrient loading into the system. In terms of the abstraction further downstream, the capacity of Storage at Pulborough may be an issue here – would it be sufficient for holding recycled water and existing quantity abstracted at the Tidal Arun? Would blending be sufficient to satisfy DWI? There is also an issue with algae at Storage at Pulborough which may required consideration. Are there plans to increase the size of Storage at Pulborough? You would also need to undertake studies to determine whether the water would be lost at all in the system if being piped and discharged in the Rother. As with the other reuse schemes we have discussed with you, the quantity available for abstraction will be dependent on the Hands off flows or Minimum Residual Flows set by the licence so if these can't be met, then the abstraction must cease, regardless of how much is discharged into the river upstream. Location of pipelines will be of concern given crossing South Downs National Park.	See response above to comments on this option.
Environment Agency	**Extension of BTA – Import from Portsmouth Water at Pulborough** Is this 15 ml/d in addition to current supply or an additional 15Ml/d? Presuming it is an extension on existing agreement?	Extension of existing agreement
Environment Agency	**Import from Portsmouth Water at Pulborough** Presumably this is the existing bulk supply from Portsmouth?	Yes, relates to existing import.
Environment Agency	**Rock Road bi-directional transfer (SW to SN)** Currently no concerns but would want to consider any sustained increase in use from the Brighton zone.	Noted
Environment Agency	**Horsham WTW Recycling Conjunctive use with storage at Pulborough** Is this in addition to the Littlehampton recycling scheme or mutually exclusive? Is Storage at Pulborough big enough to hold water from the Tidal Arun, Littlehampton recycling and this scheme? How would this be managed? Has River Adur Offline Reservoir been considered for blending if the scheme went ahead? Southern Water have indicated this is mutually exclusive with Littlehampton recycling – therefore selection of both under scenario 1 is an error.	The two recycling options which can discharge into Storage at Pulborough (Littlehampton and Horsham) are mutually exclusive, so they are not both selected in the dWRMP24. Littlehampton WTW scheme which discharges into the River Rother, and was included in WRMP19, is included in the baseline. The Horsham recycling scheme to Storage at Pulborough is also selected in the BVP.
Environment Agency	**Portfolio 1 (Standard): Arun and Western Streams** More information on projects would be welcome. Whilst catchment based measures may not deliver significant increases in supply during a drought, they could contribute to meeting desired environmental outcomes and build climate change resilience so we are generally supportive.	We have included further information in the dWRMP24 on catchment options (s5 of Tech Report and Annex 9)
Environment Agency	**Potable Resource for Brighton to Worthing**	Noted

Respondent	Feedback	Response
	Check against WINEP programme	
Environment Agency	**North Arundel Drought Permit/Order (2025 onwards)** As raised in previous planning rounds, cumulative impacts with Portsmouth Water's Slindon source need to be properly considered and appropriate monitoring and mitigation (joint plan) in place between the two companies. Generally we are not supportive of drought permits / orders being relied upon to balance supplies, particularly if mitigation and monitoring programmes are not sufficient . We need to have clear information on which scenarios this would be used.	For our drought plan we have undertaken some additional model runs using the EHCC groundwater model, jointly with Portsmouth Water to examine the impacts. We are keen to explore this further with the new updated EHCC model once available. We plan to phase out reliance on Drought Permits and Orders in droughts of up to 1:500 year severity by 2041.
Environment Agency	**Pulborough winter transfer: Provision of a permanent sludge treatment facility at Pulborough WSW** Need to understand this option in more detail. Outcome of sustainability investigation must be considered.	Noted
Environment Agency	**East Worthing Drought Permit/Order (2025 onwards)** V small amount. Any impacts on the newly diverted Teville Stream need consideration. Which drought scenario?	This scheme is selected under drought for DYAA conditions, it is not available during the summer peak as it is a modification to the existing seasonal licence. We will further examine the abstraction impacts of East Worthing on the Teville stream and other nearby water bodies during our AMP7/8 WINEP study. We plan to phase out reliance on Drought Permits and Orders in droughts of up to 1:500 year severity by 2041.
Environment Agency	**Current transfers from KMW to KME** Assumed current transfer. Network distribution/resilience. No comments GWCL: Representative – unable to assess or comment as not clear on abbreviations.	Yes, existing transfer.
Environment Agency	**Isle of Sheppey Desalination Plant 20Ml/d** GWH: Representative: Southern Water have proposed 3 individual desalination plants along the North Kent coast totalling up to 60Ml supporting neighbouring WRZ's. Are 3 individual schemes really needed? Has a feasibility study been carried out in as to whether 1 large suitably located desalination plant is less impactful than 3 smaller desalination plants? Two of the schemes are required within 4yrs of each other. Surprised such large strategic carbon intensive schemes aren't shared with other water companies, especially as desalination plants need to run continuously therefore potential for a lot of unnecessary run to waste. Current certainty of WRSE modelled reductions is not yet clear as existing WINEP investigations are underway, such significant carbon intensive schemes with potentially large environmental impacts should not be pursued until there is greater certainty on the need for such new resource options. Dependent upon the location, a full assessment of the impacts to the hydrological regime and the fresh water/saline wedge needs to be undertaken. The following text was Southern Water's own conclusion from their WRMP assessments of a desalination option in the Medway estuary: "Medway desalination option are identified as having the potential for several major adverse effects. These mainly relate to operational use of non-renewable materials and generation of wastes in the treatment process, as well as the associated carbon emissions. The schemes also have adverse effects identified regarding construction and the potential for adverse effects to designated sites or areas identified as Ancient Woodland. Overall, these alternative schemes would bring greater adverse effects than the Medway WwTW indirect potable water reuse and raising Bewl Water reservoir by 0.4m schemes."	See response above to comments on this option

Respondent	Feedback	Response
	GWCL – No comments if it is abstracting surface water and discharging any effluents appropriately. If it is abstracting groundwater we will wish to be consulted further to review any implications for groundwater quality. Outside of the water resources regime, the historic uses of the land on which site is proposed will need to be assessed to determine whether there is any risk posed by land contamination from previous land-uses. In the event of contamination being present appropriate risk assessments, mitigation and remediation will need to be carried out. Environment Agency: 3 schemes proposed – 2 close together. Is it better to have 1 large or 3 small ones? We understand desal schemes need to continually run, we would want to understand discharge of hypersaline. Also note doesn't have join up with SEW? East Thanet and Isle of Sheppey timings similar, could there be a larger one? Abstraction from where – aquifer? Are there risks of saline intrusion? Also need to consider other GW quality metrics – pesticides and PFAS. Discharge location key info too. PSO West Kent: This site is within Flood Zone 3 and is seaward of the existing flood defences. A desalination plant as described would be considered essential infrastructure that is required to remain operational during times of flooding and as such, while it can be considered a compatible form of development within FZ3, it must be resilient to flooding to ensure it can remain operational. This would include means of safe access & refuge for essential operating staff. The Environment Agency is currently considering options to ensure there is adequate flood protection to Sheerness and Queenborough through to the 2080s. There may be opportunities for efficiencies and cost savings to both Southern Water and the Environment Agency, if both worked in partnership to ensure appropriate flood protection can be provided both for the site of the desalination plant and the wider community. General info required: - source of saline/brackish water - location of hypersaline effluent, and assessment of appropriate dispersal avoiding accumulation due to sea bed features	
Environment Agency	**Reverse KME-KTZ main** SB (GWH): Selling is an abstraction from a dry valley upgradient from the White Drain and is currently included in the North Kent WINEP investigation. GWCL – No comments. Need to understand increases of abstraction and note issues with outages from WQ. Need to align with NEP work on nitrates to ensure the quantity is deliverable. Selling area – also bacterial contamination challenges.	This option is no longer selected in the draft Regional Plan and dWRMP24
Environment Agency	**Isle of Sheppey Desalination Plant 10Ml/d** GWH: Representative: Southern Water have proposed 3 individual desalination plants along the North Kent coast totalling up to 60Ml supporting neighbouring WRZ's. Are 3 individual schemes really needed? Has a feasibility study been carried out in as to whether 1 large suitably located desalination plant is less impactful than 3 smaller desalination plants? Two of the schemes are required within 4yrs of each other. Surprised such large strategic carbon intensive schemes aren't shared with other water companies, especially as desalination plants need to run continuously therefore potential for a lot of unnecessary run to waste. Current certainty of WRSE modelled reductions is not yet clear as existing WINEP investigations are underway, such significant carbon intensive schemes with potentially large environmental impacts should not be pursued until there is greater certainty on the need for such new resource options. GWCL – No comments if it is abstracting surface water and discharging any effluents appropriately. If it is abstracting groundwater we will wish to be consulted further to review any implications for groundwater quality. Outside of the water resources regime, the historic uses of the land on which site is proposed will need to be assessed to determine whether there is any risk posed by land contamination from previous land-	See response above to comments on this option.

Respondent	Feedback	Response
	uses. In the event of contamination being present appropriate risk assessments, mitigation and remediation will need to be carried out. Environment Agency: 3 schemes proposed – 2 close together. Is it better to have 1 large or 3 small ones? We understand desal schemes need to continually run, we would want to understand discharge of hypersaline. Also note doesn't have join up with SEW? East Thanet and Isle of Sheppey timings similar, could there be a larger one? Abstraction from where – aquifer? Are there risks of saline intrusion? Also need to consider other GW quality metrics – pesticides and PFAS. Discharge location key info too. General info required: • source of saline/brackish water • location of hypersaline effluent, and assessment of appropriate dispersal avoiding accumulation due to sea bed features	
Environment Agency	**Faversham sources Drought Permit/Order (2025 onwards)** Representative (GWH): Faversham sources are in the same licence (with boreholes at Beacon Hill, Sheldwich and Faversham4), and are abstractions from 2 dry valleys upgradient from Faversham and the White Drain, and are currently included in the North Kent WINEP investigation. GWCL: Representative – Faversham sources have currently shown signs of microbiological contamination, for which Southern Water have new treatment in place. Given the history, water quality in other surrounding abstractions etc. it is possible that an increase in abstraction volumes may alter the quality of the groundwater abstracted, particularly for nitrate, turbidity and microbiological contaminants. (The quality of the water abstracted may either improve or deteriorate with an increased abstraction rate or a steady abstraction rate throughout the year – there is no pre-judgement). Appropriate groundwater quality monitoring may influence future deployable output or may / may not require further treatment options to be considered.	We have recently drafted a licence application for the North Kent Summer Sources will reduce the need for this Drought Permit/Order. Abstraction impacts from these sources will be examined as part of the ongoing North Kent Chalk No Deterioration Investigation and will help to inform assessment of the drought permit impacts. We acknowledge the risks around water quality, and this will form part of any statement of need during drought permit application. We continue to progress our Catchment First water quality schemes in the North Kent Chalk with the longer-term aim of improving raw groundwater quality. We plan to phase out reliance on Drought Permits and Orders in droughts of up to 1:500 year severity by 2041.
Environment Agency	**Recommission Gravesend source** SB (GWH): Gravesend is an abstraction from the chalk in NE of the Darent catchment, at the expense of groundwater flow to the Tidal Thames, and possibly Shorne Marshes. This would be from already licensed (currently unused) rates. GWCL – Gravesend is a Safeguard Zone and subject of a PR19 catchment scheme run by Southern Water. Though the comments in column D imply that nitrate was linked to a monitoring problem, the fact Southern Water are currently implementing a catchment scheme suggests there is a real issue with water quality too. Lessons learned from this will have to be incorporated to the assessment of this WR proposal, as there may be treatment constraints and there will be a need to understand the impacts of renewed, or indeed increased, abstraction on current pollutant trends, particularly due to the paucity of data caused by the source being out of service for so long. GWCL – Historically there was a question as to whether the abstracted (raw) groundwater also had other contaminants present, specifically solvents, so a full assessment of groundwater quality will be required to determine future treatment options and proposals. Groundwater quality may influence deployable output. Note significant solvent problem experienced in past. This needs to be reviewed and understood in terms treatment.	Raw water quality will be an important consideration of treatment design during re-commissioning of this source. We will need to undertake further monitoring to understand the water quality challenge. We currently have a number of active catchment management schemes as part of our Catchment First programme within the North Kent Chalk aquifer with the aim of improving future groundwater quality by the time this scheme is required (2040s). We will also consider deterioration risk as part of our ongoing No Deterioration Investigation into the North Kent Chalk
Environment Agency	**Portfolio 1 (Standard): North Kent** Not clear what or where this is. Further description of scheme required. Unable to comment or fully assess.	We have included further information in the dWRMP24 on catchment options (s5 of Tech Report and Annex 9)

Respondent	Feedback	Response
Environment Agency	**Portfolio 1 (Standard): Medway** Not clear what or where this is. Further description of scheme required. Unable to comment or fully assess.	We have included further information in the dWRMP24 on catchment options (s5 of Tech Report and Annex 9)
Environment Agency	**Medway WWTW Indirect Potable Water Reuse – Barming or Wateringbury discharge (12.8Ml/d)** GWH: Representative: A number of environmental issues has already been raised by Environment Agency regarding this option, previously original option of pumping direct to Eccles lake was the preferred and accepted option by the Environment Agency & Southern Water as was confirmed in Southern Water's WRMP19. Reduction in the important summer augmentation flows from Bewl reservoir to the River Bewl/Teise/Medway wb's downstream will be considered hydrological deterioration under WFD for the d/s HMWB's. The replacement of freshwater flows input at the top of the catchment is not equally mitigated for by the discharge of treated effluent in the lower section of the Medway. The scheme will potentially have implications throughout the Medway system, with only a small section of 56eedbac. 9km between Barming and Springfield having a minimal impact on flow. If this option is to be applied throughout extended dry periods to meet peak demand it would risk exacerbating existing and well documented issues within the lower Medway during the Summer. Any discharge at Wateringbury will be immediately upstream of the Environment Agency's strategically important gauging station for managing the catchment impairing the Environment Agency's ability to effectively manage water resources within the catchment. Significant WQ issues have been previously raised by colleagues, the acceptability of this scheme is mostly dependent on the technically achievable standards of the discharged effluent. GWCL – No objection to the proposal as it stands from a GWCL standpoint. It will be important to consider the nutrients, and any other contaminants in the treated effluent, and the loading to the river. Appropriate assessments will be needed to support an environmental permit application. It should be noted that there may be potential interactions with the groundwater environment (especially in the SPZ 1 area of Forstal abstraction). This should be assessed too. Impact on flows / flood risk will also need to be assessed. GWCL – In the discussions on 24/01 it appeared there had been a meeting to discuss this proposal that GWCL did not attend and there was a proposal to consider changing the discharge from the Medway at Springfield to Eccles lake. If Eccles Lake is the lake between Medway and Eccles, it is in the Folkestone Beds principal aquifer and so any discharge of treated effluent would basically be disposal of effluent to groundwater. This would need to be assessed via waste and water legal and is likely to require an environmental permit. Updated GWCL comments: Eccles Lake looks like it is in the Gault Clay in plan view. Need confirmation that the lake is surrounded by Gault Clay (so Gault Clay at depth) or is suitably lined or silted up to prevent interaction with the underlying Folkestone Beds. If there is a risk of interaction with the Folkestone Beds some of the above comments will still be valid. RC: The loss of 18Ml/d of freshwater supply from the Tidal Medway, in particular during drier weather, is likely to have impacts on the estuary, including a possible permanent changing the range of the zone of the mixing of fresh-saline water (the turbidity maximum) whilst shrinking the freshwater section of the estuary. It is possible that mudflats could move upstream over time with erosion and undermining occurring downstream. Detailed TELMAC modelling is being required of Thames' Waters similar option for reuse of effluent from Mogden into the Tidal Thames and is requiring the modelling to emulate the impact over 365 days with a very dry year. The risk of this option to the estuarine environment is high and is discouraged. LS: This is a shared option with Southern Water. Please ensure ratings for Medway Southern Water option are copied across here. Dossiers do not align with those from Southern Water so two companies need to discuss further and share output from previous meetings with Environment Agency. We'd be more supportive of an offline scheme which discharges into Eccles Lake at Burh Environment Agency: Noted in Southern Water options – doesn't have indirect to Eccles Lake (our favoured option), but instead using discharge to Medway which we have significant concerns about. Likely to object to Medway discharge.	See response above to comments on this option.

Respondent	Feedback	Response
	Significant concerns around estuarine impacts. Concerning that recent comments and sessions haven't fed back into plans. Significant concerns around geomorphological impacts to Medway estuary (more concerned here than the Stour reuse options). Extensive and long running investigation will be essential.	
Environment Agency	**Bewl Water / River Medway Scheme (stages 1 to 4) Drought Permit/Order (2025 onwards)** GWH – SF We have already provided detailed responses on the Bewl Drought Options to Southern Water and whilst Stage 4 Option was modified with reduced impacts to the environment there remained significant impacts that were unacceptable. We would expect the new Winter Darwell option to be included used as a 'pre-emptive' drought option. Revising the option sequencing and actively implementing such an option would also reduce demand on Bewl and limit the need for further more damaging Bewl Drought option stages to be implemented, again limiting the impact to the environment. GWCL – No comments FBG – Representative: Should drought permit options be considered? We want to avoid the risk of more frequent drought permits as by their nature there are more harmful to the environment. Need to understand time period for delivery. Note within drought plan and we have concerns with later stages (3/4). Stage 4 is unacceptable. We would expect reliance to stop before 2040.	We have committed to reduce reliance on drought options and from 2041 we have not included them in the dWRMP24. In the meantime, we will continue to engage with Environment Agency and Natural England to develop and implement our mitigation programme (a project has been established to progress this).
Environment Agency	**River Thames Desalination: abstraction from the Thames Estuary (10Ml/d)** GWH: Representative: Southern Water have proposed 3 individual desalination plants along the North Kent coast totalling up to 60Ml supporting neighbouring WRZ's. Are 3 individual schemes really needed? Has a feasibility study been carried out in as to whether 1 large suitably located desalination plant is less impactful than 3 smaller desalination plants? Two of the schemes are required within 4yrs of each other. Surprised such large strategic carbon intensive schemes aren't shared with other water companies, especially as desalination plants need to run continuously therefore potential for a lot of unnecessary run to waste. Current certainty of WRSE modelled reductions is not yet clear as existing WINEP investigations are underway, such significant carbon intensive schemes with potentially large environmental impacts should not be pursued until there is greater certainty on the need for such new resource options. GWCL – No comments if it is abstracting surface water and discharging any effluents appropriately. If it is abstracting groundwater we will wish to be consulted further to review any implications for groundwater quality. Outside of the water resources regime, the historic uses of the land on which site is proposed will need to be assessed to determine whether there is any risk posed by land contamination from previous land-uses. In the event of contamination being present appropriate risk assessments, mitigation and remediation will need to be carried out. Environment Agency: 3 schemes proposed – 2 close together. Is it better to have 1 large or 3 small ones? We understand desal schemes need to continually run, we would want to understand discharge of hypersaline. Also note doesn't have join up with SEW? East Thanet and Isle of Sheppey timings similar, could there be a larger one? FBG – we need confirmation on the location. Brine stream discharge. Abstraction intake needs to ensure it doesn't entrain fish and eels. Need to understand impact of discharge whether in estuary or near creek, mixing zones and where it would impact on migration zones. Also potential for thermal uplift. A&R: Is it in the MCZ? Subtidal area is sensitive General info required: • source of saline/brackish water • location of hypersaline effluent, and assessment of appropriate dispersal avoiding accumulation due to sea bed features	See response above to comments on this option.
Environment Agency	**Raising Bewl by 0.4m** We have fedback57 comments previously.	See response above to comments on this option.

Respondent	Feedback	Response
	Raising Bewl by 40cm is only providing 3 Ml/D, how much infrastructure change is required? Questions around filling and output? Note pumping rates impacted by eels regs – how does this tie in to resilience? What would the habitat loss on margins of reservoir? Potential harm to protected or nationally rare species around the margins of reservoir. Loss of ancient woodland – Mitigation is not possible for the loss of ancient woodland so compensatory habitat creation would be required. Worthwhile carrying out survey on reservoir capacity considering desilting activities. Discussions around emergency release procedures – will need to be taken into account of. Environment Agency suggest desilting is considered alongside/as an alternative scheme.	
Environment Agency	**Desalination on East Thanet coast (20Ml/d)** GWH: Representative: Southern Water have proposed 3 individual desalination plants along the North Kent coast totalling up to 60Ml supporting neighbouring WRZ's. Are 3 individual schemes really needed? Has a feasibility study been carried out in as to whether 1 large suitably located desalination plant is less impactful than 3 smaller desalination plants? Two of the schemes are required within 4yrs of each other. Surprised such large strategic carbon intensive schemes aren't shared with other water companies, especially as desalination plants need to run continuously therefore potential for a lot of unnecessary run to waste. Current certainty of WRSE modelled reductions is not yet clear as existing WINEP investigations are underway, such significant carbon intensive schemes with potentially large environmental impacts should not be pursued until there is greater certainty on the need for such new resource options. GWCL – No comments from GWCL regarding a proposed desalination plant provided it is abstracting surface water and discharging any effluents appropriately. If it is abstracting groundwater we will wish to be consulted further to review any implications for groundwater quality. GWCL – Outside of the water resources regime, the historic uses of the land on which site is proposed will need to be assessed to determine whether there is any risk posed by land contamination from previous land-uses. In the event of contamination being present appropriate risk assessments, mitigation and remediation will need to be carried out. PSO East Kent: We would need more detail. A desalination plant would be considered essential infrastructure and should remain operational during flooding events. Appropriate resilience measures along with safe access & refuge should be considered. Where is the abstraction location? Is there potential for geomorphological impacts? Environment Agency: 3 schemes proposed – 2 close together. Is it better to have 1 large or 3 small ones? We understand desal schemes need to continually run, we would want to understand discharge of hypersaline. Also note doesn't have join up with SEW? East Thanet and Isle of Shippey timings similar, could there be a larger one? Abstraction from where – aquifer? Are there risks of saline intrusion? Also need to consider other GW quality metrics – pesticides and PFAS. Discharge location key info too. General info required: • source of saline/brackish water • location of hypersaline effluent, and assessment of appropriate dispersal avoiding accumulation due to sea bed features	See response above to comments on this option.
Environment Agency	**KME-KTZ transfer** SB (GWH): Selling is an abstraction from a dry valley upgradient from the White Drain and is currently included in the North Kent WINEP investigation. GWCL – No comments.	Noted
Environment Agency	**Desalination on East Thanet coast (10Ml/d)** GWH: Representative: Southern Water have proposed 3 individual desalination plants along the North Kent coast totalling up to 60Ml supporting neighbouring WRZ's. Are 3 individual schemes really needed? Has a feasibility study been carried out in as to whether 1 large suitably located desalination plant is less	See response above to comments on this option.

Respondent	Feedback	Response
	impactful than 3 smaller desalination plants? Two of the schemes are required within 4yrs of each other. Surprised such large strategic carbon intensive schemes aren't shared with other water companies, especially as desalination plants need to run continuously therefore potential for a lot of unnecessary run to waste. Current certainty of WRSE modelled reductions is not yet clear as existing WINEP investigations are underway, such significant carbon intensive schemes with potentially large environmental impacts should not be pursued until there is greater certainty on the need for such new resource options. GWCL – No comments from GWCL regarding a proposed desalination plant provided it is abstracting surface water and discharging any effluents appropriately. If it is abstracting groundwater we will wish to be consulted further to review any implications for groundwater quality. GWCL – Outside of the water resources regime, the historic uses of the land on which site is proposed will need to be assessed to determine whether there is any risk posed by land contamination from previous land-uses. In the event of contamination being present appropriate risk assessments, mitigation and remediation will need to be carried out. PSO East Kent: We would need more detail. A desalination plant would be considered essential infrastructure and should remain operational during flooding events. Appropriate resilience measures along with safe access & refuge should be considered. Where is the abstraction location? Is there potential for geomorphological impacts? Environment Agency: 3 schemes proposed – 2 close together. Is it better to have 1 large or 3 small ones? We understand desal schemes need to continually run, we would want to understand discharge of hypersaline. Also note doesn't have join up with SEW? East Thanet and Isle of Sheppey timings similar, could there be a larger one? Abstraction from where – aquifer? Are there risks of saline intrusion? Also need to consider other GW quality metrics – pesticides and PFAS. Discharge location key info too. General info required: • source of saline/brackish water • location of hypersaline effluent, and assessment of appropriate dispersal avoiding accumulation due to sea bed features	
Environment Agency	**Sandwich Drought Permit/Order (2025 onwards)** Representative (GWH): Sandwich abstracts water from the chalk near the headwaters of the Wingham River and watercourses draining north towards the North and South Streams. It was included in the low flow NEP scheme for the Little Stour and Wingham River. GWCL: Representative – Sandwich is designated as a Safeguard Zone for nitrate, so is currently part of the WINEP catchment schemes. There is also a risk from microbiological contamination. Any changes in abstraction volume may influence the groundwater quality. The Deployable Output or treatment requirements may be influenced.	We are preparing to submit a licence application that will aim to remove the need for this drought permit and order. We are currently planning pump testing to understand the potential yield and impacts of changes to abstraction patterns at Sandwich. Additionally, both West Sandwich and Sandwich will be under investigation as part of our AMP7/8 No Deterioration WINEP which will provide much more detailed monitoring and modelling of abstraction impacts. We plan to phase out reliance on Drought Permits and Orders in droughts of up to 1:500 year severity by 2041.
Environment Agency	**Import from Affinity Water No info. Assumed low risk – bulk supply from AW** GWCL: Representative – No comment.	No response required
Environment Agency	**Portfolio 1 (Standard): Stour** Not clear what or where this is. Further description of scheme required. Unable to comment or fully assess.	We have included further information in the dWRMP24 on catchment options (s5 of Tech Report and Annex 9)
Environment Agency	**Bewl-SH transfer capacity**	There are no options to increase the transfer capacity from Bewl to SHZ WRZ.

Respondent	Feedback	Response
	We need a lot more detail on this one to understand – is this existing transfer network? Is there additional abstraction pressure on Medway? Note joint NEP scheme for INNS mitigation	
Environment Agency	**Hastings WTW effluent to augment storage in Darwell Reservoir (Circa 9.5Ml/d)** GWH: Representative: Not clear where this is being discharged to, is this direct to supply or in Darwell Reservoir? Darwell isn't offline and we note there is a compensation flow, this will need to be assessed. Need to understand contribution to reservoir storage and impact outflow. GWCL: Representative – the risks to groundwater quality for this transfer should, theoretically, be low due to the limited interaction with the groundwater / lining of reservoirs. There might be risks from the transfer pipeline itself in the event of malfunction leading to discharge of effluent, so the route options would need to be appraised. Also past suggestion of taking Darwell offline and redirecting spring flows.	See response above to comments on this option.
Environment Agency	**Reconfigure Rye – replacing boreholes to increase yield and resilience (increased redundancy)** GWH: Representative: This abstraction is within the existing licensed quantities, from boreholes located just north of the site of Southern Water's surface water abstraction from the upper part of the River Brede. The boreholes will need to be constructed to a suitable depth and with sufficient casing to prevent direct impacts on the river. GWCL: Representative – No concerns regarding this proposal. Southern Water are aware of the current groundwater quality and treatment and the installation of a new borehole should help address any issues groundwater quality issues related to the existing well and adit system. Appropriate decommissioning of the existing well and adit system will help decrease risks to groundwater quality and supply.	Risk of deterioration will be considered as part of the reconfiguration assessment.
Environment Agency	**Portfolio 1 (Standard): Cuckmere and Pevensey Levels** Not clear what or where this is. Further description of scheme required. Unable to comment or fully assess.	We have included further information in the dWRMP24 on catchment options (s5 of Tech Report and Annex 9)
Environment Agency	**Portfolio 1 (Standard): Rother** FBG- proposals should include RAG as includes licencing and augmentation proposals. Recommend that these proposals are removed from catchment measures and submitted separately. GWCL: Representative – Not clear what or where this is. Further description of scheme required. Unable to comment or fully assess.	We have included further information in the dWRMP24 on catchment options (s5 of Tech Report and Annex 9)
Environment Agency	**River Thames Desalination: abstraction from the Thames Estuary (20Ml/d)** GWH: Representative: Southern Water have proposed 3 individual desalination plants along the North Kent coast totalling up to 60Ml supporting neighbouring WRZ's. Are 3 individual schemes really needed? Has a feasibility study been carried out in as to whether 1 large suitably located desalination plant is less impactful than 3 smaller desalination plants? Two of the schemes are required within 4yrs of each other. Surprised such large strategic carbon intensive schemes aren't shared with other water companies, especially as desalination plants need to run continuously therefore potential for a lot of unnecessary run to waste. Current certainty of WRSE modelled reductions is not yet clear as existing WINEP investigations are underway, such significant carbon intensive schemes with potentially large environmental impacts should not be pursued until there is greater certainty on the need for such new resource options. GWCL – No comments if it is abstracting surface water and discharging any effluents appropriately. If it is abstracting groundwater we will wish to be consulted further to review any implications for groundwater quality. Outside of the water resources regime, the historic uses of the land on which site is proposed will need to be assessed to determine whether there is any risk posed by land contamination from previous land-uses. In the event of contamination being present appropriate risk assessments, mitigation and remediation will need to be carried out.	See response above to comments on this option.

Respondent	Feedback	Response
	Environment Agency: 3 schemes proposed – 2 close together. Is it better to have 1 large or 3 small ones? We understand desal schemes need to continually run, we would want to understand discharge of hypersaline. Also note doesn't have join up with SEW? East Thanet and Isle of Shippey timings similar, could there be a larger one? FBG – we need confirmation on the location. Brine stream discharge. Abstraction intake needs to ensure it doesn't entrain fish and eels. Need to understand impact of discharge whether in estuary or near creek, mixing zones and where it would impact on migration zones. Also potential for thermal uplift. A&R: Is it in the MCZ? Subtidal area is sensitive General info required: • source of saline/brackish water • location of hypersaline effluent, and assessment of appropriate dispersal avoiding accumulation due to sea bed features	
Environment Agency	**T2ST to Kingsclere potable resource** Wider discussions taking place on T2S transfers options	No response required
Environment Agency	**Portfolio 1 (Standard): Kennet and tributaries** West Thames option?	We have included further information in the dWRMP24 on catchment options (s5 of Tech Report and Annex 9)
Environment Agency	**Romsey – new boreholes to replace shallow adit** The options at Romsey and Newchurch appear to increase abstraction over and above recent actual, albeit still within licences. Concerns have been raised by FBG around the inclusion of schemes that increase reliance on chalk aquifers – conflicts with messaging in Regional Plan to move away from reliance on sources which could impact chalk stream habitats. We believe Timsbury will be undergoing a WFD no deterioration investigation which should indicate how feasible this option is.	Our AMP7 No deterioration investigations for this source will consider the abstraction impacts on the groundwater body and River Test, including possible CSMG compliance
Environment Agency	**Sparsholt to [redacted] Potable Resource** No start date – can you confirm if this is a T2S transfer or part of another option?	This is a component of the T2S transfer and its implementation in the investment model.
Environment Agency	**[redacted] (50) – WSW – Construction** Presumably no actual DO assigned here but enabled capacity for another scheme?	Yes, that's correct.
Environment Agency	**River Test WSW to [redacted] pipeline (Southampton link main)** No date assigned here. What is the proposal?	This part of the Hampshire Grid proposals included in WRMP19
Environment Agency	**New SRO Portsmouth Transfer option – upgrade of treatment capacity at [redacted]** When is this option proposed? What does it involve? Can Portsmouth guarantee the water? Where is the recycled water coming from?	This is a dependency of the Hampshire Water Transfer and Water Recycling Project (HWTWRP). Further details in s3 of Tech Report.
Environment Agency	**Extension of Bulk Transfer agreement - Import from Portsmouth Water's PWC Source A Source to Moor Hill Reservoir** Can the water be guaranteed to be available from Portsmouth?	We continue to liaise closely with PWC on the availability of future transfers
Environment Agency	**Current transfers from HSW to HSE** Is this line a different option to line 61?	This is the existing transfer between the WRZs
Environment Agency	**Additional import from PWC Source A (further 21Ml/d)** Commented on through Gated process. No showstoppers at this stage.	No response required
Environment Agency	**Combined Woolston and Portswood WWTW Indirect Potable Reuse (Circa 12.8Ml/d)** Description says to support flows at PWC Source A but isn't the discharge point downstream of here? This is a similar scheme to one that was explored in Gate 1, which was rejected on grounds of water quality and RCSMG concerns raised in SRO Gate 1 (possible impact on fish migration) Also if discharge point is at Woodsmill (which is suggested) it is unclear how this supports abstraction at PWC Source A upstream. What's the suggestion here?	See response above to comments on this option.

Respondent	Feedback	Response
Environment Agency	**Additional import from PWC Source A (additional 9Ml/d)** This bulk supply has been assumed to be 4.5Ml/d in other models due to non delivery of Portmsouth's Worlds End source ?	This was assumed to be a 9Ml/d transfer and incorporated as such in the draft Regional Plan and dWRMP24, however PWC have now highlighted that this option is not available. So we are no longer including this option in our plan.
Environment Agency	**Recycled water sent to [redacted] via Havant Thicket Reservoir** Comments raised through SRO Gated process, refer to Gate 1 and 2 responses.	No response required
Environment Agency	**River Test WSW Drought Permit (from 2027 onwards)** Text doesn't state scenario. Should only be in extreme scenario at this point though pending local discussions required to determine whether in the long term we believe this option should be removed in its entirely even in a 1 in 500 event. LoS should be considered first.	Noted. Only included in the 1 in 500 scenarios from 2027-28 onwards
Environment Agency	**Ashford WTW Recycling Conjunctive use to Bewl Reservoir** GWH: Representative: This option would support Bewl & the wider Darwel/Bewl River Medway Scheme and therefore SEW would benefit from such an arrangement, no equivalent scheme can be found in SEW's options. This would be a net flow loss from the Upper Stour catchment affecting the wider water balance & resource availability, at the time of implementation such a volume could be of even greater meaningful volume for the catchment. The scheme could negatively impact upon other planned resource options in the catchment affecting their viability i.e SEW Canterbury. Transferring treated effluent from the Stour to the top of the Medway catchment which already sufferers from WQ issues, would exacerbate the situation. A 40km pipeline over significant changes in alleviation is likely to be very carbon intensive with significant associated pumping costs, creating its own WQ issues within the pipe line i.e. in low points within the pipe will create and retain heavily DO depleted water, following a period of non-use. How is the scheme to be operated? will it be in continuous use or only to manage peak demand or in extreme dry events? GWCL: Representative - the risks to groundwater quality for this transfer should, theoretically, be low due to the limited interaction with the groundwater / lining of reservoirs. There might be risks from the transfer pipeline itself in the event of malfunction leading to discharge of effluent, so the route options would need to be appraised. A&R: significant loss of water out of the Stour. Very concerned about option. Needs to be considered holistically. Thinking about nutrients, carbon and chemistry too, not just water quantity. Significant scheme, would need appropriate justfication.	See response above to comments on this option.
Environment Agency	**Test MARS ASR recharge of chalk near River Test WSW** ASR in the River Test WSW area has never been previously explored and there is limited knowledge about the characteristics of the confined Chalk aquifer in this area. On that basis, we would suggests that the successful delivery of a scheme yielding up to 15Ml/d is extremely uncertain. Experience from drilling boreholes in similar areas nearby suggests that the chalk is likely to be poorly developed in this area with poor water quality offering limited opportunities for a successful ASR scheme. This should be described as a 15Ml/d scheme. Company have since told us the scheme is 5Ml/d not 15Ml/d as described in text. Significant work needed to see if this is viable. Confirmation that the area being considered is confined and does not interact with the environment would be needed. Must be habs regs compliant.	We acknowledge the uncertainty with this scheme. As clarified during pre-consultation the 15Ml/d capacity was incorrect (transcription error). The revised yield is up to a maximum of 5Ml/d. The updated option has a maximum capacity of 5.5Ml/d. The earliest start data has been pushed back to the 2040's which will give us time to further investigate the viability of this option. We are exploring if it is possible to conduct some early investigations into scheme viability.
Environment Agency	**Darwell Reservoir (stages 1 (freshet removal) to 3) Drought Permit/Order (2025 onwards)** GWH: SF: Environment Agency Has previously provided extensive comments regarding these options. It is understood that the Darwell Spring Option has been removed. Environment Agency remains concerned by the Summer Darwell option impacting down stream designated sites, impacting WQ and numerous downstream abstractors & water users. New Darwell Winter option and sequencing is favoured over more damaging Summer Option. Drought Options need to be phased out as soon as possible.	We have committed to reduce reliance on drought options and from 2041 we have not included them in the dWRMP24. In the meantime, we will continue to engage with Environment Agency and Natural England to develop and implement our mitigation programme (a project has been established to progress this).

Respondent	Feedback	Response
	GWCL: Representative - no comments	
Environment Agency	**Portfolio 1 (Standard): New Forest** More information on projects would be welcome. Whilst catchment based measures may not deliver significant increases in supply during a drought, they could contribute to meeting desired environmental outcomes and build climate change resilience.	We have included further information in the dWRMP24 on catchment options (s5 of Tech Report and Annex 9)
Environment Agency	**Havant Thicket Resource** Is this the Havant Thicket raw water option? Not clear why 190Ml/d is listed? Several lines for HT so need to be whittled down?	The dWRMP24 submission provides greater clarity on the HWTWRP SRO and other options which relate to Havant Thicket reservoir (See Tech Report s3 + s7)
Environment Agency	**Terminate Darwell reservoir supply to SEW – Variable** For agreement between SW and SEW GWCL: Representative - No comment.	No response required
Environment Agency	**Raw water Transfer between Havant Thicket res and [redacted] - First Section, 120Ml/d.** Several lines for Havant Thicket. Needs to be refined to ensure there is no double counting of resource benefit.	The dWRMP24 submission provides greater clarity on the HWTWRP SRO and other options which relate to Havant Thicket reservoir (See Tech Report s3 + s7)
Environment Agency	**Cross-Solent main export to IOW** Will reliance on this reduce over time?	Yes, with development of Sandown recycling scheme there will be less reliance on the Cross-Solent main.
Environment Agency	**Sandown WwTW Indirect Potable Reuse (Circa 8.1Ml/d)** Flows in the Eastern Yar can get very low during low flow or drought periods. There is a MRF of 1Ml/d at Alverstone). This may be reviewed as part of WFD requirements but not confirmed. For WQ - see Richard Dean's initial modelling from 2015. Flows are sustained in the Eastern Yar by the augmentation scheme (abstraction from 6 boreholes and River Medina). Note that abstraction from the Medina is also dependant on meeting MRFs near Newport and Blackwater GS. Southern Water also have a drought permit option to potentially lower these MRFs on the Medina so that abstraction can continue. We would want to see how/if use of recycling at Sandown will impact on the cross Solent use of water from Test. The location of the works will need consideration due to the risk of flooding, area is marshland and on flood plain.	We have produced a fact file (Annex 13) for this option which provides further details. This scheme was selected in the WRMP19 and s3 of the Tech Report provides an update on progress.
Environment Agency	**Sandown WwTW Indirect Potable Reuse (Circa 5.2Ml/d)** Is this scheme dependant on the above also happening? Unclear what plans for the Cross Solent transfer are in the long term….	This is an alternative capacity to the option above (i.e. mutually exclusive)
Environment Agency	**Newchurch LGS - new BHs (BH4 and replacing BH1 & BH2)** Need further information to comment in detail. We believe the company was looking into a 40 % reduction in the list of licences for reduction / modernisation shared with the Environment Agency. Is that still planned? Also, this scheme was taken off the WINEP for WFD no deterioration investigation on the basis of there being no growth. If the company intend to increase use of this source, they would need to reinstate that investigation at the company's cost.	Our licence modernisation programme is still ongoing. We acknowledge that a No deterioration investigation would be required to progress this scheme and are currently preparing to scope a study for the Isle of Wight Lower Greensand which would include consideration of this scheme.
Environment Agency	**Portfolio 1 (Standard): Isle of Wight** More information on projects would be welcome. Whilst catchment based measures may not deliver significant increases in supply during a drought, they could contribute to meeting desired environmental outcomes and build climate change resilience.	We have included further information in the dWRMP24 on catchment options (s5 of Tech Report and Annex 9)
Environment Agency	**Weir Wood reservoir Drought Permit/Order (2025 onwards)** GWH - SF: Environment Agency has provided comments through the various WC DP's processes and previously raised concerns about reducing the minimum reservoir compensation flows supporting the Upper Medway. Environment Agency have previously sought further details on Southern Water providing further mitigation; including improving WQ from WWTW discharges to offset compensation flow reductions. Bulk Water Transfer between Bough Beech Reservoir WTW's & Southern Water's Weir	We have committed to reduce reliance on drought options and from 2041 we have not included them in the dWRMP24. In the meantime, we will continue to engage with Environment Agency and Natural England to develop and implement our mitigation programme (a project has been established to progress this).

Respondent	Feedback	Response
	Wood WTW's, is a possible option that has not been explored and is currently implemented to address Weir Wood outage issues, such an option could potentially replace the need for environmentally sensitive Drought Order Options being employed. Drought Options need to be phased out as soon as possible.	
Environment Agency	**Raw resource for Sparshot to [redacted]** Not quite clear how this option differs from that below it? Are they mutually exclusive?	This is a component of the T2ST option.
Environment Agency	**Raw water Transfer between Havant Thicket res and [redacted] - Second section, 150Ml/d.** Is the 150Ml/d just quoting the capacity of the pipe? Need to careful that this isn't seen as the resource benefit (i.e. DO). As with all options rows 97-100, options are selected at 2027 and 2031 for delivery. Must be kept up to date with any agreed positions in relation to the section 20 agreement.	The dWRMP24 submission provides greater clarity on the HWTWRP SRO and other options which relate to Havant Thicket reservoir (See Tech Report s3 + s7)
Environment Agency	**Raw Resource for Havant Thicket to [redacted] 61Ml/d transfer** Aligns with Gate 2 submission	No response required
Environment Agency	**Recharge of Havant Thicket Reservoir with water from Recycled water from [redacted] and new WRP. 90Ml/d** Quantity aligns with Gate 2 - though not sure this can be selected as well as option above (row 98?) aren't they 90Ml/d in total? i.e. need to be mutually exclusive?	The dWRMP24 submission provides greater clarity on the HWTWRP SRO and other options which relate to Havant Thicket reservoir (See Tech Report s3 + s7)
Environment Agency	**Recharge of Havant Thicket Reservoir with water from Recycled water from [redacted] and new WRP. 90Ml/d.** Extra available in PDO and MDO scenario due to going to Havant Thicket This has 2027 assigned to it - it has to align with the other Havant Thicket options	The dWRMP24 submission provides greater clarity on the HWTWRP SRO and other options which relate to Havant Thicket reservoir (See Tech Report s3 + s7)
Environment Agency	**Culham (80) - raw – Construction** Is the delivery of the quantity in terms of resource being double counted if a capacity is assigned to both the transfer and the bulk supply?	No, it is not double counted.
Environment Agency	**Culham to Sparsholt (80) Raw – Construction** Is the delivery of the quantity in terms of resource being double counted if a capacity is assigned to both the transfer and the bulk supply?	No, it is not double counted.
Environment Agency	**Raw water Transfer between [redacted] and River Test lakes - 60Ml/d.** Would like to understand what this option involves. We understand the water to be coming from Havant Thicket but there are a lot of proposals from Havant Thicket - need to be sure the water is available for all of these different options. Havant Thicket modelling crucial to confirm availability of water under the scenarios needed. Is it proposing to use the Little lake or large River Test lake? Little lake holds only 4-5 days storage and has blue green algal problems. We believe the larger lake is unlined and so any abstraction for supply could interact with the environment which we cannot support.	The raw water transfer between Itchen WSW and Little Testwood Lake was a previous option based on a larger HWTWRP transfer (not considered viable) and this option is not being progressed. It has been superseded by the drinking water transfer from Itchen WSW to Yewhill WSR and then on to Rownhams WSR called (OAo1 & TOt1) - Southampton Link Main (60 Ml/d) and has been a key element of the modelling. This alternative option provides greater resilience and long-term integration with future projects e.g. Thames to Southern Transfer.
Environment Agency	**NEW - added by Environment Agency: Transfer from SES Water Bough Beech to Southern Water's SN WRZ** GWH, Representative: Bulk Water Transfer between Bough Beech Reservoir WTW's & Southern Water's Weir Wood WTW's. This scheme has not been identified as an option. Environment Agency suggesting this could be a possible NEW option as it is a transfer link that has recently been created as a result of Weir Wood Reservoir outage issues. This could be used during peak demand or drought periods and alleviate any network bottle necks that have been exposed in recent events and reduce pressure on other sensitive sources within the Sussex North WRZ. Such an option could reduce or remove the need for environmentally sensitive Weir Wood Drought Orders and form part of Southern Water's future drought resilience work.	We intend to explore the option of continued bulk supplies from SES further as part of the process of refining the regional plan and dWRMP24.

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Environment Agency	Reducing demand is a big part of the solution The National Framework set the direction for long term reductions in water usage that includes: • On average, 110 litres per person, per day, of water use by 2050 • Reducing non-household demand • Achieving the water industry's target to reduce leakage by 50% compared to 2017/18 levels by 2050	**Addressed** The draft plan is consistent with the draft regional plan, which seeks to achieve the national Framework aspirations for reducing demand. Demand management is a core component of the overall WRMP programme.
Environment Agency	**Supply options explored** five emerging plans, overall, propose few new interconnections of water resources between regions, and in some cases will reduce transfers of water between regions. The plans are showing that the pressures of a growing population, tackling climate change and protecting and enhancing our environment means that water which potentially could have been transferred between regions is now largely being held within regions. The main exception to this is greater connectivity between WRW and WRSE. Overall, there are some uncertainties and inconsistencies between the regional plans where potential cross- regional options do exist, and there is an inherent need for alignment between groups about availability and requirement, timing, and volume. The reconciliation process in April and May 2022 has been key to ensuring inter-regional options are aligned None of the emerging regional plans define a final set of options, although WRSE and WRE do include an indication of the most likely solutions in their plans	**Addressed** The WRSE draft regional plan explains how WRSE fully explored inter regional transfers with the other regions through the regional reconciliation process. This has resulted in less transfers than originally anticipated, but this is a direct result of the other region's challenges becoming more significant over time, with a resulting decrease in availability of water for transfer to the south east. The WRSE draft regional plan and Southern Water draft WRMP identifies an adaptive plan and reported pathway in accordance with the WRPG.
Environment Agency	**The environment destination** WRSE's emerging plan looks at the widest range of scenarios that encompass those set out as a starting point in the National Framework, along with catchment options that provide wider resilience benefit. A more limited number of scenarios were considered in the emerging plans for other regional groups. Common across all the plans in the scenarios considered is a lack of detail on the delivery of agreed objectives for Protected Areas. Plans should include this detail to demonstrate they fully meet the existing regulatory commitments in their environment destination.	Protected Areas were included in our catchment prioritisation approach for abstraction reduction. Our Environmental Ambition scenarios include meeting CSMG standards for SSSI rivers and under our Alternative Scenario and we have taken account of emerging outcomes of our Habitat Directive WINEP schemes. Our High Ambition scenario provides enhanced protection for the River Itchen SAC/SSSI and Pulborough Brooks SSSI.
Environment Agency	**Multi-sector planning** All five regional groups have considered some future water demands from non-public water supply sectors in their emerging regional plans. However, planning for sector water use beyond public water supply is limited across the five emerging plans. WRE particularly have recognised the acute water resources pressures facing sectors beyond public water supply in their region and have developed their emerging plan in an inclusive way to consider needs from other sectors in their decision-making. Fully meeting the initial aim of the National Framework to take a multi-sector approach to regional water resources planning has not been achieved by the emerging	**Addressed** WRSE worked closely with its multi-sector group to explore and understand the range of multi-sector future water resource needs, including multi-sector water resource options. Whilst further work will continue with other sectors, the work to date is explained in the WRSE draft regional plan.
Environment Agency	**Expectation - ensuring a secure supply of water** We expect: • regional plans to show the solutions needed to overcome the deficit and include adaptive pathways to show how companies can deal with future uncertainty • the solutions to not create environmental deterioration or preclude environmental enhancement • the solutions to be best value and adhere to the principles provided in the water resources planning guidelines • water companies to deliver the programmes of work and complex decision analysis required to produce a preferred best value plan with adaptive pathways as needed to provide secure water supplies and environmental improvement over the next 25+ years	**Addressed** WRSE considers it has prepared a draft regional plan that accords with the WRPG requirements and that meets the aspirations of the National Framework. The draft regional plan is a best value plan with adaptive pathways and a reported pathway in accordance with the WRPG. Southern Water's draft WRMP accords with the approach undertaken by WRSE.

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	The emerging regional plans do not identify many water transfers as potential options for securing water supplies in the future. Given that transfers have previously been seen as critical to the solution, we expect regional groups to provide: • justification and evidence that greater national connectivity of water resources is not worth pursing within their best value plans • evidence that enough supply options (of all types) are available nationally to allow selection only of best value options to secure supplies in all locations Where transfers are proposed, regional groups must provide: • evidence that the transfer provides best value and does not allow environmental deterioration or preclude environmental enhancement in the donor region • compatible assessments of water supply resilience in donating catchments and receiving regions as well as consistent information on transfer quantities, operation and timing presented by the regional groups	
Environment Agency	**Expectations of achieving long term demand reductions** regional plans should provide: • short term goals through to 2030 that are well defined and achievable • detailed and well-evidenced actions, with further details being reflected in the water resources management plans. This will give confidence that ambitious demand reductions can be met • monitoring plans and reporting alongside adaptive planning by the companies • appropriate adaptive plans with decision points and pathways which manage the uncertainty associated with reducing demand. For example, alternative supply options could be investigated to be brought online, at a certain decision point if it is shown that the water company is failing to achieve the demand reductions	**Addressed** At a regional level, WRSE has presented a draft plan with adaptive pathways and considered the timing of decision points and alternative programmes. Monitoring of performance is a critical part of the adaptive planning process and the draft regional plan includes a section on monitoring and review.
Environment Agency	**Restoring, protecting, and improving the environment** Our expectation for the regional groups and water companies is to: • provide an environment destination reflective of the shared environmental goal of regional groups, government, and regulators, which reflects the expectations of stakeholders and contributes to the ambitions of the government's 25 year environment plan • take account of WINEP in delivering environmental improvements between 2025 and 2030 • from 2030 onwards, as a minimum, to plan for an environment destination scenario which is consistent with the Environment Agency Business As Usual plus (BAU+) locally verified scenario • provide evidence that all catchments have a fully considered environment destination with accompanying detail on the timing and prioritisation of achieving that destination.	**Addressed** WRSE's regional plan considers a wide range of environmental scenarios and has adopted a reported pathway that is considered to reflect and meet the Environment Agency expectations for restoring, protecting and improving the environment, in accordance with the WRPG and the National Framework. We have provided more detailed company and catchment level information in our submission (s5 of Tech Report and Annex 9).
Environment Agency	**Planning to meet regulatory requirements** We expect: • regional plans to accommodate known draft and developing approach changes and evolving regulatory positions as far as practicable • regional plans to include evidence and detail of the impact of such approach and regulatory changes • this to be achieved by regional groups working collaboratively with government, regulators, and stakeholders toward shared goals	**Addressed** WRSE has, working collaboratively with Government, regulators and stakeholders, considered a range of policy positions and considered how different policy assumptions and dates for implementation could affect the cost, best value metrics and range and type of options selected in the regional plan. These results are explored in the WRSE draft regional plan Technical Annexes. The Annexes also set out the range of future policy and other challenges that the region faces, and actions that WRSE proposes to take in response.
Environment Agency	**Final draft regional plans in autumn 2022** Water company water resource management plans must also reflect the relevant regional plan, or where two relevant plans do not reflect each other, the reasons for this difference must be outlined	**Addressed** Southern Water has ensured that its draft WRMP reflects the WRSE draft regional plan, and/or explained clearly the circumstances in which any

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		variation from the regional plan is presented – e.g. in sensitivity or performance testing of the proposals in the plan
Environment Agency	**Final draft regional plans in autumn 2023** Regional plans should be “plans in their own right” that link to relevant water company water resource management plans. This means that we expect regional plans to set out a level of detail and evidence that allows regulators and stakeholders to understand and assess how a regional group will deliver all the elements of its plan. A plan that refers readers to other sources to obtain sufficient understanding required to enable the regional plan to make sense will not meet our expectations	**Addressed** To the extent to which it can be within the draft plan presented to date, WRSE has sought to ensure that the draft regional plan is a 'plan in its own right'. WRSE will continue to work on the content of the regional plan ahead of publishing a revised draft and final regional plan following consultation.
Environment Agency	**Final draft regional plans in autumn 2024** draft final regional plans should: • include information to demonstrate that it has been endorsed by all relevant water company boards and the regional group board • describe the feedback received and changes made in response to the January 2022 emerging plan consultation • be published alongside all associated documents and appendices in a publicly accessible place.	This information will be included with the draft final regional plan.
Environment Agency	**Isle of Sheppey desalination plant** Desal and reuse generally considered higher risk and require further information	See response above to comments on this option.
Environment Agency	**Medway indirect potable water reuse - Barming or Wateringbury** Desal and reuse generally considered higher risk and require further information. A number of environmental issues have already been raised by Environment Agency regarding this option, particularly significant concerns if discharge to the Medway. Reduction in the important summer augmentation flows from Bewl reservoir to the River Bewl/Teise/Medway wb's downstream will be considered hydrological deterioration under WFD for the d/s HMWB's. The replacement of freshwater flows input at the top of the catchment is not equally mitigated for by the discharge of treated effluent in the lower section of the Medway. The scheme will potentially have implications throughout the Medway system. If this option is to be applied throughout extended dry periods to meet peak demand it would risk exacerbating existing and well documented issues within the lower Medway during the Summer. Significant WQ issues have been previously raised by colleagues, the acceptability of this scheme is mostly dependent on the technically achievable standards of the discharged effluent. Would also need to consider impacts on the estuary and morphology, significant concerns regarding this. Detailed TELMAC modelling is being required of Thames’ Waters similar option for reuse of effluent from Mogden into the Tidal Thames and is requiring the modelling to emulate the impact over 365 days with a very dry year. The risk of this option to the estuarine environment is high and is discouraged. It should be noted that there may be potential interactions with the groundwater environment (especially in the SPZ 1 area of Forstal abstraction). This should be assessed. Impact on flows / flood risk will also need to be assessed. Confirmation of discharge site required. If it is to the lake between Medway and Eccles, it is in the Folkestone Beds principal aquifer and so any discharge of treated effluent could potentially be disposal of effluent to groundwater. This would need to be assessed and is likely to require an environmental permit.	See response above to comments on this option.
Environment Agency	**Desalination on East Thanet coast & transfer to KTZ** Desal and reuse generally considered higher risk and require further information. Note that estuary is highly protected site. We would have significant issues if taken from estuary. Note direct to sea discharge is localised impact as long as there is appropriate dispersal impact assessment.	See response above to comments on this option.

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	Note that 3 desalination plants along North Kent cost totalling 60Ml/d have been proposed. Has a feasibility study been carried out on a single larger scheme?	
Environment Agency	**River Thames Desalination: abstraction from the Thames Estuary** Desal and reuse generally considered higher risk and require further information. General info required: • source of saline/brackish water • location of hypersaline effluent, and assessment of appropriate dispersal avoiding accumulation due to sea bed features In combination impacts need to be considered - cumulative impact of multiple schemes on estuary.	See response above to comments on this option.
Environment Agency	**Ashford WTW recycling conjunctive use to Bewl reservoir** Desal and reuse generally considered higher risk and require further information	See response above to comments on this option.
Environment Agency	**Littlehampton recycling** Desal and reuse generally considered higher risk and require further information. Rely on discharge to Storage at Pulborough which is likely infeasible. Note mutually exclusive with Horsham reuse but both selected.	See response above to comments on this option.
Environment Agency	**Horsham reuse** Desal and reuse generally considered higher risk and require further information. Rely on discharge to Storage at Pulborough which is likely infeasible. Note mutually exclusive with Littlehampton reuse but both selected.	See response above to comments on this option.
Environment Agency	**Hastings WTW reuse** Desal and reuse generally considered higher risk and require further information	See response above to comments on this option.
Environment Agency	**Woolston & Portswood reuse** Desal and reuse generally considered higher risk and require further information	See response above to comments on this option.
Environment Agency	**Sandown reuse** Desal and reuse generally considered higher risk and require further information	See response above to comments on this option.
Environment Agency	**Newchurch new boreholes** High environmental risks if abstraction is increased – WFD no det investigation required. We also query consistency with Environmental Destination ambitions.	See response above to comments on this option.
Environment Agency	**Romsey new boreholes** High environmental risks if abstraction is increased – WFD no det investigation required. We also query consistency with Environmental Destination ambitions.	See response above to comments on this option.
Environment Agency	**River Adur Offline Reservoir** Water availability currently being considered by Environment Agency. High environmental risks due to impacts on water quality if dilution is reduced, with possible WFD implications. Further information and analysis required – noting ambitious delivery timescales	See response above to comments on this option.
Environment Agency	**Shoreham desal** Further engagement with Environment Agency planned	We are engaging with the Environment Agency on a regular basis to provide updates on this scheme
Environment Agency	**Test MAR** Uncertainty of yield of this scheme rather than environmental risk	See response above to comments on this option.
Environment Agency	**Drought options including Pulborough** Need clarity on under which conditions drought permits are being relied upon, we are not supportive of prolonged reliance on drought permits/orders, monitoring/mitigation needs to be adequate	See response above to comments on this option.
Environment Agency	Raw water Transfer between [redacted] and River Test lakes - 60Ml/d.//// Possible feasibility issue with use of River Test lakes rather than environmental risk	See response above to comments on this option.

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Environment Agency	**Climate change – Supply side methods** WRMP19 used UKCP09 climate change projections. Since WRMP19, underlying data that was used has been updated with the UKCP09 climate change projections being replaced with UKCP18 projections (most up to date climate change projections for the UK, using the best climate models from the UK). UKCP18 is not a 'like-for-like' replacement for UKCP09, therefore it would be good to provide further explanation on how the UKCP18 data has been used.	We have explained the use of UKCP18 data in our submission (s5 of Tech Report and Annex 7)
Environment Agency	**Climate change – Supply side methods** There are significant disparities between the forecast impact that climate change will have for WRZs across WRSE – central impacts between 0 and 200Ml/d. This needs to be explained. If a water company has decided not to use the WRSE model and method we would expect justification for why the WRSE model is not suitable and we would also expect there to be some exploration of the impact of the differences and/or reasons for the differences between water companies' models and WRSE model/method if water companies were to apply their own model in Phase 1. We would want to see if a water company using its own model in Phase has any impact on the options approach and what the differences would be. Any method needs to be justified by problem characterisation WRSE should be clear how this analysis has been done – what time frame, what time periods, what data? Are there more detailed specifics/information on the bias corrections? What has been corrected? Is this justified? We want to see this information on bias correction. Met Office does provide guidance, but many different approaches. During bias correction of UKCP18 data is there a risk/potential loss of spatial coherence? No changes suggested regarding methods used to determine climate change impact associated with a given set of perturbation factors, other than that it MUST be demonstrated that selected drought events still reflect a 1 in 500 year level of risk once climate change perturbations have been applied (impact of climate change can alter relative severity of drought events in record) -How will you go about demonstrating this? -How will you select baseline appropriately – before applying climate change factor? This need to be clear. How big sample size? Is it representative? Further explanation on this stage would be useful as it is presently confusing to read. It may be useful to present as a mathematical equation to make this step clearer. It would also be useful to provide justification that this is an appropriate approach. It is understandable that reordering of drought sequences may be required as we don't know the scale of the issue. We do need to be kept informed if there are any adjustments throughout the process. Further demonstration is required that the DO impacts from the 28 climate change scenarios are sufficient to capture the range of uncertainty presented in the UKCP18 products. Is there a timeline of how the RCP2.6 projections and comparison with RCP8.5 will fit into the programme of work? WRSE not currently proposing to do DO modelling using UKCP18 probabilistic projections (not spatially coherent and available at a monthly time step). If any findings imply that use of the 28 RCP8.5 spatially coherent projections does not cover the range of uncertainty associated with UKCP18, further DO runs may be undertaken. What steps will be undertaken to check whether RCP8.5 covers the range of uncertainty associated with UKCP19? Could use Pdfs to check individual systems? We understand that there will be a backwards linear scaling/calculation, but that linear scaling may be different between WRZs? WRSE need to demonstrate the discrepancy between WRZs.	We have followed a consistent climate change methodology with other WRSE members. For our Water Resource Zones, we see differences in forecast largely depending on the make-up of the sources. Some of our zones are largely asset and licence constrained and therefore insensitive to climate change. Typically, our groundwater zones see a small deployable output benefit due to increased groundwater recharge whilst our surface water dominated zones typically see sizeable deployable output losses. There is also a wide range of uncertainty across the 28 spatially coherent projections.
Environment Agency	**Demand** It is not explicit how WRSE will be considering the impacts of hot, dry weather and changes in demand due to coronavirus. Appreciate 2019/20 being used as base year now but when will WRSE be	The WRSE Draft Regional Plan has adopted different forecasts from the Emerging Reginal Plan, as

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	reviewing/revisiting this? There is likely to be long term impacts to water use behaviour as a result of COVID-19. With regards to analysis of long term COVID-19 impacts, welcome more detail on this... • What are WRSE looking at to inform forecasts in relation to COVID-19 impacts? • When will forecasts be refined? • Will peak demand scenario sufficiently cover peak demands experienced in 2020 during lockdown and hot weather? WRSE reference a separate forecast for Oxford-Cambridge area was produced. It is suggested that there are 4 scenarios being used but none are included in the baseline forecast, but rather applied as alternatives. The WRPG is explicit in section 6.3 that Ox-Cam growth should be included in baseline forecasts WRSE indicate that different growth scenarios have been used for different WRZs. How do the growth scenarios differ? This is confusing considering 2.12 indicates the Housing Plan Principal scenario has been adopted across WRSE. What are the assumptions used for new property PCC in the demand forecast? Is this consistent across all zones? Is this informed by actual data? As per previous comment, has Housing Plan Principal been consistently used and what is the justification of not using Housing Plan High or Housing Need High? Please see the WRPG, section 6.3. Are companies using their own behavioural modelling to estimate demands? Also to clarify, will water use restrictions be excluded from baseline? For existing measures over AMP7, are they assumed to deliver as planned (WRMP19), and has this/will this be reviewed at any point? Applies to both water efficiency and leakage. Reference to external government interventions such as water labelling. Are WRSE applying consistent assumptions across companies around the benefits and timescales from a water labelling policy? What water labelling scenarios have you used and what evidence has informed your modelling on these? It would be useful to reference the technical note recently produced. Have you considered in detail the impacts on customer behaviour and will this vary by zone, considering socio-economic factors? Understand a top down modelling approach has been applied for NHH demand forecast. Are there any emerging new NHH demands that are being accounted for/need to be accounted for in specific zones? Why was the 5 sector segmentation approach chosen rather than more sectors? Where will WRSE be detailing non standard NHH demands in particular zones? Are there any new non-standard demands that need to be accounted for? When assessing the impacts of weather on demand, does this include behavioural insights (e.g. using weather behaviour models?). How have WRSE assessed whether results of the modelling are “good” – is this by benchmarking against historic data? Does this consider particularly recent demand trends over the past 5 years? We would welcome further detail on how the model performance is assessed and is reflective of the latest understanding of customer behaviour. What drought severity is WRSE applying for the baseline DYAA demand? Is this consistent across zones? Are 1 in 500 demands materially higher? Note for peak demand modelling, is WRSE considering the higher peaks experienced in 2020? Latest research indicates that the impacts of COVID-19 led to higher responses to warm dry weather, therefore 2018 peaks may be underestimating likely future peaks. For transparency, please can WRSE list the different scenarios used for each zone and what periods these cover (e.g. the DYCP, DYPW). Good to see assessment of demand at 1 in 200 and 1 in 500 has been undertaken. Has there been a comparison against DYAA demands and a consideration of which scenario to apply for central planning?	explained in the WRSE draft regional plan Technical Annexes. See above for WRSE draft regional plan.

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	What are the timeframes for further modelling for the revised draft plan?	
Environment Agency	**Deployable Output** Stress testing - need further explanation of how this is being undertaken. There needs to be detailed explanation of how this is undertaken and how method is tested. WRSE should quantify the size of the uncertainty and impact on the option selection arising out of each WC using different methods to derive DO. No info is available on the data used and whether appropriate ways were used to derive gw and sw DO. Baseline DO calculated using RSS but critical period DO submitted by company only? Tier 1 options – is there a list of these? What are the other options do they relate to DROs or other definition? DO benefit coming from other options – selection criteria for tiers of options, and tier 3. Confidence grades – criteria and output of these should be provided and explained.	We have provided details of how we have calculated deployable outputs for the dWMP24 submission in Annex 8
Environment Agency	**Environmental Ambition: Objectives and Assessment** It is not clear how regional priorities/environmental ambition inform this process and the development of the SEA objectives. Interpretation is that methodology will do this through the scoping of policies, however planning guidance requires long-term ambitions which may be limited if constrained by existing policy. There does not appear to be a specific assessment against environmental ambition. This may be embedded in the SEA objectives but needs clarity.	**Addressed** The Environmental Assessments undertaken as part of the draft regional plan have been updated and provide an explanation of the objectives and assessments.
Environment Agency	**Environmental Assessment** It provides explanation on how GIS tool is used to help WCs in their SEA assessment. More detail and explanation can be useful on how the GIS tool works and the way the impacts are assessed? It is stated that: “It is proposed that an overarching set of SEA objectives are developed for WRSE. The overarching objectives could then be used as a framework for WRMP24 with sub-objectives chosen by each water company to reflect the issues and priorities in their area”. More explanation on how these overarching objectives will develop and implemented throughout WRSE and WRMP24 will be useful. To generate the SEA metrics for each option, one for positive environmental effects and one for negative environmental effects”… This method appears simplistic to evaluate the impacts of the environment. On the same page when different SEA objectives are listed, including 5 min metrics of natural capital to the list would have been good approach to evaluate the NC objectives under the SEA?	Our SEA for the dWRMP24 is presented in Annex 18. This explains how we have used the regional plan SEA as a basis for our WRMP SEA.
Environment Agency	**Environmental Destination technical note provided on 14 September** Technical note states that National Framework used the Waterbody Abstraction tool to estimate deficits in 2050 for each waterbody. This is not correct the FIXIT and WR GIS were used to get the 2050 deficits. Bullet point states that licences are reduced to future predicted abstraction as this would imply no loss of DO. Is this assumption correct? DO may only be licence constrained, therefore FL is used to assess DO. Bullet point surface water licences are reduced before groundwater licences. This is opposite to our approach in the National Framework, however, early comparisons indicate that there are generally not too many differences in outcomes between the approaches. Bullet point on BAU uneconomic waterbodies – what was this exclusion based on? Adaptive pathways – we are aware that this has moved on since the paper was written i.e. no longer looking at a sudden realisation of environmental destination.	We have explained how we have derived our environmental destination scenarios for the draft Regional Plan and dWRMP24 in Annex 9
Environment Agency	**Groundwater Modelling** It is not clear what the weighted scores are based on. It is not clear where the “high level recommendations referred to are located. A detailed description of the groundwater DO assessment method, where it occurs outside the Regional Simulation Model, will be provided by each company and summarised in the technical reporting by WRSE for the regional supply forecast.”- it is not clear whether these are available for review.	We have provided details of how we have calculated deployable outputs for the dWMP24 submission in Annex 8.

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	Will this information be provided? How small is the cut off for DO? How was the following achieved? "…consistency in approach and moderation across the different water companies was also a key theme of the development. " "Adjusting the scoring and banding around DO variation at varying levels of drought sensitivity" – what is this used for? The method referred to isn't clearly signposted – which separate method is being referred to?" Multi-sector drought risks to private groundwater abstraction will be considered under a separate methodology. Not clear how this approach is justified in being judged "ideal". How many of the automated scorings were overridden? Where are the records of justifying comments? It would be useful to see the magnitude of change representing a source dynamically made to each source DO(s) – might be in the spreadsheet referenced in Section 4.2 (Pg13) It's unclear as to whether this spreadsheet just shows which method used or the actual results	
Environment Agency	**Hydrological Modelling** Surface and groundwater interactions – further work commissioned, however the approach is not presented	We have provided details of how we have calculated deployable outputs for the dWMP24 submission in Annex 8.
Environment Agency	**Options Appraisal** A high proportion of catchment options from unconstraint list did not pass water company screening for inclusion on the constrained list of options, largely due to uncertainties around quantifying deployable output (DO) benefit and the lack of consistent metrics to identify the potential environmental, social and catchment resilience benefits. The MS therefore proposing a framework with 4 core sections to facilitate consistent approach in quantifying DO and wider benefits. Why a consistent and wider NC approach not used by regions to assess the wider benefits of the catchment options? Figure 7: Overview of catchment management options appraisal is not clearly explained as to how different Yes/ No answers will lead to certain decisions on options. The C.1 to C.4 categorisation is not clear. Appendix 3: Listed the option metrics that are single point values and do not vary over time and as such do not need to be profiled Option (see Table 8). Why BNG and NC are listed as single valued benefits in table 8? states that WRSE reviewed companies rejection registered. No information was provided on rejection registered in the emerging plan consultation not much detail on rejection rationale – says it will be included in regional plan consultation, but it wasn't in the emerging plan states demand management strategies and options to be consistent and aligned for companies – is this the case?? Supply side options – WRSE have not applied minimum size threshold which is good. Limited information on the screening methodology – says available via company level assessment Pre con engagement- says engagement on options that should have happened with Environment Agency- all options info has been provided later than set out. Carbon – how has carbon been accounted for GW augmentation schemes owned and operated by Environment Agency. For example WBGWS? It remains unclear from WRSE publicly whether they will be designing 50% leakage reduction and/or 110 l/h/d PCC as a requirement of the options. We expect WRSE to be clear around whether any options will be automatically selected to meet these criteria alongside SDB. WRSE also need to be explicit on the base year for the 50% leakage reduction. Are the companies consistent with the choice of base year?	We have presented our approach to options appraisal in s6 of the Tech Report. Further details of all the options considered and those rejected are included in Annex 12 and 13. Catchment options are covered in more detail in Annex 9.

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	There is little discussion in main document and only very brief references of NC in Appendix 3. The main benefit of catchment management or nature-based solution is limited to DO benefit. Strongly encourage WRSE to expand options assessment against the NC categories set out in WRPG, noting that these do not have defined metrics. WRSE should set out the metrics to use, whether quantitative or qualitative, monetised or non-monetised. This will be key to determining best value programmes. WRSE need to review the latest WRP tables. The following areas are particularly important: 1. Option types: We have compiled a list of option types to be included in the WRP Tables. We approached WRSE for input but as yet have not had responses. It is essential that WRSE companies map the option types across to this format, for this will be the drop down list used for the option types column in the WRMP24 WRP tables for all companies. We welcome further option type suggestions from WRSE after reviewing the list. Options Appraisal 2. Comments on the current option types listed in Appendix 1 of this MS: • Other" categories and scheme types should not be used as they are non-descriptive. We are proposing "new technology" and "international imports" option types which will be applicable for some of WRSE's "other" options. • Smart metering options will need to cater for properties without meters becoming smart metered, and smart meter upgrade programmes (which will have different benefits etc.). • Drought options to reduce demand (i.e. TUBs/NUEBs) are not clear in the appendix. 3. Other key columns in the options appraisal tab of the WRMP24 WRP tables which WRSE need to consider include: • Flagging interdependent options (and having a mechanism to ensure that interdependent options are not selected in isolation by error) • Flagging partnership options and assessing/stating the total cost of the option as well as the cost for the company's portion of the option • Flagging where an option is preferred, least cost and sits in alterative programmes It is stated that due to uncertainties around quantifying deployable output (DO) benefit and the lack of consistent metrics to identify the potential environmental, social and catchment resilience benefits, many unconstrained catchment options didn't go through to WRSE. It would be useful to explain further if consistent natural capital methods were considered to assess these benefits, and the reasons if these methods have been discounted. The figure does not clearly explain how different Yes/ No answers will lead to certain decisions on options. The C.1 to C.4 categorisation should be further explained. Table 6 'option stage and type' – please describe further what the different option stages are and if the stages bear any significance in options decisions. i.e. if by the time the Regional plan go to publication an option is still at "planning" stage would it mean an automatic rejection? Table 6 'DO Tier' – what are the tiers and how are they defined? How will modular options be represented in tables 6-8. Will multiple tables be completed for each module of the option? It'd be useful to detail option utilisation in tables 6-8. For example when is the option expected to be utilised? All the time, just in drought or dry year, critical period, etc. BNG and NC are listed as single valued benefits in table 8. It is strongly recommended that these are expanded against the BNG and NC categories in WRPG (see above "Natural capital considerations" section The overlapping benefit of nature-based solution for catchment flood management to slow the flow, which can increase recharge rates to aquifers and lead to increased DO (in groundwater resources) is not well considered or explained in the MS. In the other words, according to the new changes in WRPG "the Catchment Based Approach may also have a role to play in mitigating potential deterioration in advance of making changes to licences". The benefit of flood management and licence changes needs	

Respondent	Feedback	Response
	to be considered when developing catchment management options and including it into the Water Resources management scope (Figure 8). The latest WRPG also added that the Environment Agency has developed an INNS risk assessment tool, which needs to be used to prevent risk from water transfer schemes between two catchments. Customer/stakeholder engagement: According to the new WRPG: "In compiling your plan you should also actively engage with customers and stakeholders at a local or catchment level. You should consider any local pressures and local solutions". The MS included engagement with stakeholders and explains the process how local options out of WRSE will be incorporated into the option list. Would strongly encourage inclusion of details around the nature and objectives of some of the local solutions, the funding mechanism and the longer-term benefits of the options suggested by other stakeholders. In addition, for integrated catchment management, what is the role of locals and how they will assist in maintenance and implementation of the future schemes? Will engagement be prioritised on options selected in preferred and alternative scenarios? WRSE must actively use existing environmental information available to them publicly including consultation of Abstraction Licensing Strategies and the latest Water Framework Directive status data. For options consulted on previously, we expect WRSE to review previous comments provided. We would encourage this to be a clear formal step in the process before engagement with regulators Would expect WRSE to more clearly set out timeframes for engagement at the different stages of the regional plan.	
Environment Agency	**Outage** Can all acronyms be clearly explained either at the beginning or end of the document? It would be useful to signpost the reader to what elements of the plan have been changed following comments. Either in a table in each method statement as an audit trail or in a separate document similar to SoR detailing iterations for all method statements. The methodology would really benefit from a simple statement near the start that puts the method in the context of the UKWIR Risk Based Planning Methods (s 2.5.3 of this being about outage allowances). The method described by WRSE is similar to what the UKWIR guidance would call "Basic 'reference' method" but it would be really good for WRSE to spell that out clearly themselves. The methodology doesn't seem to cover how they'll decide what Outage Allowance percentile to use in each WRZ. Not sure if this sits in another separate methodology maybe? If it is missing entirely then that is quite an issue and should be addressed. The approach with outage allowance of new options needs careful consideration. Need to ensure that options can be appraised fairly – including outage allowance in option benefits would impact AIC. This could materially impact options selected. Where supply system mitigation has been identified/applied, this needs to be clearly/transparently presented through AR to regulators. When system mitigation is applied, needs to be representative of what has occurred (factoring in outages in that system combined, demands and actual operational constraints). Figure 4 is around UOPC – some concerns if this is same approach for WRMP reporting. Abnormal WQ beyond is exactly what I would expect would be included in unplanned outage in an annual review. Do also need to consider extent to which source output deterioration has been accounted for in BL supply, (e.g. through other changes to DO). On planned events (UOPC legitimate outage screening) – the mechanism as set out in supp guidance for prolonged outages offers mechanism to avoid incentives to delay major maintenance. The company would need to ensure that where there is a reduction in BL DO for a planned outage, it is not accounted for in outage allowance too (i.e. avoid double counting), but that there is the appropriate outage allowance for the source outside of the prolonged planned outage duration. With regards to outage data gaps (e.g. scenarios 3 and 4 of partial outage data), a company would need to carefully justify selection of equivalent representative source to use in place. If companies have local	Our approach to deriving an outage allowance is explained in Annex 8.

Respondent	Feedback	Response
	DI figures and outputs from other sources, can they fill in data gaps to avoiding having to use surrogate data? Very limited info around how significant prolonged planned outages will be identified to incorporate into WRMP forecasts (at what point will companies review its latest planned outage programme and reflect where required necessary BL DO reductions, and make any adjustments to outage allowance to avoid double counting?). When average DO/peak DO is referenced, would be good to clarify that this is under a 1 in 500 year drought (as expected of supply modelling). Use of target headroom rather than outage allowance needs to be clearly explained/justified to regulators On magnitude adjustments – references reductions from reduced demand – is this in relation to demand reductions over the planning period? For transparency companies will need to detail where the outage for each new supply is detailed. Is it in either; 1. Include an outage allowance in the baseline supply/demand forecast to account for new options 2. Include an allowance for outage in the DO benefit of options. If companies are selecting the period of historical data, again for transparency and to be clear how the data has been derived they should detail in the narrative why the period has been selected and any assumptions made in selecting the period. The outcome of any sensitivity testing and how it has influenced defining the historical period should be clearly explained. This is particularly the case if companies are considering data to be unreliable or if considering clipping the record. How partial outage has been accounted for will need a clear narrative by each water company. Give some examples of what sort of dry year emergency actions might be taken to address outage if saying that outage allowance would be smaller in a drought. Are there examples of actions that would be taken or brought forward that otherwise wouldn't in a normal year? Decisions around writing down DO or not needs to be through liaison with regulators, and will depend on impact on the zone over what duration. Slightly concerned by phrasing around long duration low likelihood events on p21/22. Question on page 24 whether low likelihood events are unlikely to coincide with severe drought? Suspect there is positive correlation between outage causes and drought severity (many WQ issues are heightened, sources used more so mechanical issues may be more likely, ability to abstract reduced etc.). Be careful not to double count when outage options have been identified in the outage allowance and WAFU of the option. If the WAFU benefit of the option is detailed, then the outage allowance needs to be adjusted to reflect this benefit of the option.	
Environment Agency	**Regional Simulation Model** Hydrological modelling – companies to provide flow inputs. How are WRSE ensuring consistent inputs by companies to the DO assessment in the RSS model? On the first primary stage of use for the model – DO assessments sources & schemes – is this alongside company level supply modelling and will the two be compared and validated? Will the baseline DO figure be per WRZ/water company or will there also be an overall regional DO? Have any region-LoS been assumed for consistency? What assumptions have been made around climate change scenario and sustainability reductions? When will the Regional Simulation Report by Atkins be available and shared with regulators? The information on validation is limited. Validation is crucial to the model outputs being fit for purpose. WRSE have not clearly explained how validation will occur, and in particular what outputs will be compared to. Is there validation against actual observed events? For example, will water company historic/recent actual data be used to compare model outputs to?	We have provided details of how we have calculated deployable outputs including how the RSS has been used for the dWMP24 submission in Annex 8.

Respondent	Feedback	Response
	Will there be a commentary provided on the validation of the sub-models especially where expert judgement is required in the regional plan submission? Which company areas do not have any models? WRSE should further detail validation evidence it will be able to report. Perhaps this information will feature in the detailed Atkins report? We appreciate that calibration/validation of sub-models will sit with water company specialists. Has this sign off come before or after seeing the behaviour of their system coupled with other models? What engagement with the Environment Agency has occurred around the RSS being universally applicable/accepted across WRSE, is there any planned if results differ from expectations. What demands are being assumed in the model runs and is there/will there be stress testing at higher demand levels? As WRSE note, there are differences in assessment methods for groundwater yields. We expect this to be detailed in the groundwater methodology document. Are WRSE sure that all constraints can easily be carried into pywr? Presumably some constraints will not have been coded previously. Note from experience that some licence constraints can be very difficult to represent and required extensive scripts (e.g. rolling average annual licence limit, hands off levels etc). It would be useful to set out the different LoS for 1. Customers 2. The environment 3. Emergency (level 4). Rather than just state LoS for level 4 restrictions as ODI's are often linked to customer LoS for companies so they use TuBs as a LoS too and this is often what drives the plan. 2.20 makes reference to dead storage. This is very different to emergency storage so unless this section refers to dead storage (in contents) the reference to it should be taken out. It would be good to set out what the outcomes of the August 2020 consultation were. Please could WRSE clarify how it will use LoS in the RSS? Presumably, companies are maintaining their own levels of service? Will the RSS need to use the minimum across all companies and what are the limitations of this in considering water available for use? Appreciate that assumptions around emergency storage will not be aligned. If emergency storage is reached anywhere in the model, will this mean a failure point across the region or just in single supply zones? Positive to see this alignment to Environment Agency expectations It would be useful to indicate which scenarios are driving the plan for each zone ie. PDO, MDO DYCP To clarify are WRSE proposing treatment works losses and operational use is calculated using simulation modelling/external to the simulation modelling? Would like to see more clarity/explanation on these rules – there is the potential for them to become very complex during different configurations of drought and the more interconnections are made in the region. For example, will rules be updated when different portfolios of options from the investment model are tested in the RSS? Non PWS customers was brought up in our previous advice to WRSE. How will it be accounted for in RSS if the method is still being developed and when is this expected to be completed? There will need to be clear explanation as to assumptions and any value changes made for scenarios driving planning. WRSE note that companies may find the RSS unsuitable for one or more circumstances. Given this risk remains, WRSE should provide timelines of when the model validation will be complete and any concerns/issues around model suitability will be known. If there are model suitability issues, WRSE will need to clearly communicate what the issue in model behaviours and what the group needs to do to address this and ensure the model is fit for purpose across all resource zones.	
Environment Agency	**Resilience** The WRSE team then met with water companies on an individual basis to define 'bespoke' scores for individual schemes, mainly for larger options. Again, this was carried out on a challenge/accept basis, where changes to the generic scoring were only accepted by the WRSE team where appropriate logical	Our approach to decision making is set out in s7 of the Technical Report.

Respondent	Feedback	Response
	and conceptual representations were made.' Bespoke scores and changes to generic scoring if made should be transparent in the regional plan. Metric scoring needs to be transparent and easily understandable for stakeholders	
Environment Agency	**Review of Programmes and Plans. Catchment Based Approach and Catchment Partnership and Nature Recovery Strategies** Guidance identifies the requirement to use a catchment based approach and identify partnerships. This is lacking in the methodology and it would be useful to include the plans and programmes to be included in the baseline with specific reference to catchment partnerships and the emerging nature recovery strategies. Linking to this, within the themes within para 1.16 there is not an explicit theme on nature recovery and habitat creation. Though it recognised that this may be embedded within other themes, it may warrant a theme in its own right or adapting an existing theme.	Annex 9 of our submission covers are whole approach to protecting and enhancing the environment.
Environment Agency	**Stochastic** What are the implications of not including dynamic demand in the supply side WRSE methods? How does not including dynamic demand affect the regional simulation modelling outputs? NAO and SST acronyms should be explained as North Atlantic Oscillation and Sea Surface Temperature. Risk that extreme/ extended drought events are not reflected in the training dataset. WRSE do state that companies can mitigate this via complementing the stochastic dataset with drought artificial weather series to represent prolonged events (although the stochastic generator will not have been trained on this). We need further clarity on how they would do this - it needs to be justified carefully and applied across all region carefully. WRSE needs to test the reliability of the replicates; i.e. the generator is generating sensible replicates. If there are no prolonged or extended events in the training dataset, there are ways (e.g. using probabilities) to protect these characteristics. Concerns the baseline period doesn't cover the most severe droughts. Starts in 1950. Further explanation should be provided as to this approach and any limitations this may present Many of the applications that these stochastic datasets will be used for involves the use of rainfall and PET data in hydrological and/or hydrogeological models. Companies may be required to conduct translation and/or bias correction to align data that has been produced with existing rainfall-runoff and groundwater models. This is to deal with spatial issues (some models may require gridded data, others require point/catchment average time series) as well as bias impacts (models may have been calibrated using different datasets and application without bias correction may result in bias of model outputs). WRSE should be transparent and demonstrate all bias corrections that are made, providing justification. How will models be validated/deemed acceptable? WRSE should clearly demonstrate evidence of how bias corrections will be carried out, assessment of how accurate the models are and demonstrate that company models are acceptable/fit for purpose (quality assurance; are models generating different outputs e.g. natural flows?) The Environment Agency flagged concerns with inhomogeneities with the HADUK data set. Where such inhomogeneities are known to exist, or where inconsistencies have been found, companies have applied appropriate measures (for example excluding data associated with some grid squares). WRSE has not, however, conducted a full review of all datasets used in training the stochastic weather generator. Has WRSE satisfied itself that these measures have been appropriately applied? In pre-consultation we advised that 1. More work is required to make the generation of the data sets more understandable. This includes explaining the limitations of the generation of the data sets and how they feed into the hydrological, groundwater and demand model. 2. The Environment Agency have highlighted to WRSE an issue in relation to potential inhomogeneities in single square HADUK rainfall data which is driving the stochastic weather generator. WRSE will need	We have provided details of how we have derived our supply forecast including use of stochastic data in Annex 8 of the submission. In addition, Annex 23 sets out the methodologies we have adopted from the Regional Plan in our submission.

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	to demonstrate that the rainfall and PET datasets have been used do not contain inhomogeneities which will bias the results. For issue no. 1 Yes, above comments are addressed in the revised method statement. i.e. in section 1.5. it is explained in more details that how climate datasets are derived from relation between different output variables (e.g. rainfall, PET and temperature) and climate indicators to generate datasets, which are statistically consistent but showing different versions of what could have happened. Also Figure 1. Illustrates how stochastic data are used for WRSE. Under 2. Methods and approach, it is explained that "This method statement does not give an in-depth description of the methods used to generate these datasets but does outline key differences between those datasets generated for WRMP19 and those generated for this round of planning, as well as highlighting key characteristics of these datasets". Data generated for WRMP19 only included NAO and SST as climate drivers, but several more climate drivers have been used in this recent project. The inclusion of a greater range of climate drivers has resulted in a better model fit and a smaller need to bias correct outputs. The use of a greater range of climate drivers has also driven a change to the baseline period used on which to fit the models. Section 2.13 expands on limitations in generating of the datasets. It adds on how to address the limitation: "WRSE does, however, believe that these stochastic datasets provide a reasonable basis on which we can conduct water resources planning, as long as we keep limitations in mind when interpreting results". It is also explained that : "WRSE does not consider it appropriate to make potentially large allowances for extreme drought events, and then further allowance for the large uncertainty that exists in the determination of these events, as this may result in an overly conservative plan". For issue no 2. This hasn't been adequately addressed still. See further details below page 7 para 2.17.	
Environment Agency	**Hydrological modelling** Previous comments asked for further information on hydrological models used by Wcs – input datasets, which model etc – documentation is required in sections 2.22 -2.27 but it has not been provided. It is still unclear whether naturalised flows are being used or whether it is influenced flows that is to be used. WCs are responsible for providing the data for input into the regional stimulator and it was previously identified that this could provide inconsistencies/ error. There is little evidence that this has been addressed. Documentation of WCs decisions are required however these haven't been shared and therefore we are not in a position to state whether these are appropriate. No mention of validating WC flow inputs before they are fed into the Regional Stimulator.	We have provided details of how we have derived our supply forecast including hydrological modelling in Annex 8 of the submission.
Environment Agency	**Regional Simulation model** We are not clear how WRSE are ensuring company level/sub-models are sufficiently consistent to use together and validating this. This is crucial for regulator confidence in the outputs of the regional model. WRSE should share the Atkins Regional Simulation Model Report with the Environment Agency. This should clearly set out how company models will be combined and validated.	We have provided details of how the RSS has been used to derive our supply forecast for the dWMP24 submission in Annex 8.
Environment Agency	**Regional Simulation model** WRSE should further detail it's approach to combing water company/sub-models, and how model suitability issues will be assessed and addressed. • WRSE need to provide further detail around its approach to and outputs from its model validation. We expect this to include validation/calibration against observed data rather than just water company models. • WRSE should detail LoS used in the model and how these have been coherently brought together. • Further detail around licence and transfer representation (and rule updating) and the validation of this should be provided. • WRSE should more clearly state assumptions around climate change, sustainability changes and process losses calculations	We have provided details of how the RSS has been used to derive our supply forecast for the dWMP24 submission in Annex 8.

Respondent	Feedback	Response
	• WRSE should provide its latest timeline of model development, validation and sign off.	
Ofwat **Feedback on regional plans**	The data available on options has not allowed us to look at costing at this stage. The approach to options costing through regional plans and WRMPs needs to be robust enough to enable the right decisions to be made. Regional groups and water companies should note that Ofwat will require further information on costs at the WRMP stage to allow the necessary scrutiny. Cost of options presented should be the cost of delivering the full benefit or demand reduction and the costs presented at the WRMP24 stage are expected to be the same as those submitted in business plans at PR24. Plans should compare the cost of the best value plan to the least cost plan. The difference in expenditure, and benefits, should be clearly stated and cost drivers fully explained.	Addressed through WRSE draft regional plan and Southern Water draft WRMP documentation and will be addressed through PR24.
Ofwat	Options where companies seek funding at the business plan stage should have all known environmental and drinking water quality risks identified and mitigations costed. If there are significant risks which could prove to be showstoppers, mitigations agreed with environmental regulators or alternative options should be available. Drawing out key assumptions and uncertainties in your final costings in your plan will help Ofwat have confidence in your costing consistency through PR24.	We have further considered the risks of strategic schemes through the Scheme Deliverability Assessment presented in s9 of the Technical Report.
Ofwat	We are expecting significant effort on demand management and want to see glide paths backed up by commensurate water company actions. This should include the potential for coordination of action at a regional and national level and considerations of the benefits that could bring. Where your future initiatives to reduce personal consumption to 110 litres/head /day are reliant on government policy, we ask that you clearly articulate which policies your assumptions rely on, and your assumed dates of implementation. Beyond supporting water efficiency in households, and as noted in our previous letters from March 2020 and February 2021 on the subject, there is significant potential for improved water efficiency in the business retail sector. Improving water efficiency in non-households can and should make a significant contribution to meeting national water needs on a long-term, sustainable basis. Regional groups should demonstrate they are working effectively with retailers to set ambitious plans for improving water efficiency in the non-household sector and making appropriate assumptions around how water efficiency can be improved.	Addressed through WRSE draft regional plan and Southern Water draft WRMP documentation, with additional and clearer information presented.
Ofwat	While the regions are generally proposing to meet requirements around drought resilience, personal consumption, and leakage, we've not yet seen enough focus on profiling those changes to optimise outcomes. We want to see sensitivity analysis undertaken on this to understand if there are significant savings or changes in benefits that could be achieved from shifting dates earlier or later in the planning period.	Addressed through WRSE draft regional plan and Southern Water draft WRMP documentation, through sensitivity analysis of different policy choices and dates for achieving them.
Ofwat	Further work is needed to fully understand and prioritise changes required to water abstraction. The abstraction reductions currently proposed in the emerging plans are large and carry uncertainties, particularly in the Water Resources East and Water Resources South East plans. Regional groups should work with environmental regulators to reduce the uncertainty around these figures and profile required changes across the planning period before the next plans are published. Changes to the way water is managed should deliver a net gain to the diversity and quality of the environment to enable a better overall outcome.	Addressed through WRSE draft regional plan and Southern Water draft WRMP documentation, with clear explanation of abstraction reduction scenarios and sensitivity testing around them.
Ofwat	The plans are proposing a step change in investment. Regional groups should therefore think carefully about the deliverability of the plans from a practical perspective. This includes current supply chain constraints and affordability concerns. Regions should be making sure that their proposed solutions are adaptable and that smaller scale options aren't discounted in favour of larger solutions. Demand management has an important role within this as part of the twin track approach	Addressed through WRSE draft regional plan and Southern Water draft WRMP documentation, through performance and sensitivity testing, including forced removal of strategic options to test alternative option selection and resultant plan cost and best value metrics.
Ofwat	Some of the plans include insufficient options in comparison to the projected needs. This situation risks making all available options seem low regret as they tend to be selected widely in the modelling. The plans must include a suitable number and range of options against the projected need. Regions should	Addressed through WRSE draft regional plan and Southern Water draft WRMP documentation, and through regional reconciliation.

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	also be considering supply options to facilitate transfers to neighbouring regions where this could represent the best value approach.	
Ofwat	The regional plans show some evidence of cross-sector collaboration. This is encouraging as cross-sector projects have the potential to bring additional social benefits. However, water customers should only be expected to fund solutions consistent with the proper carrying out of the functions of a water company. We expect third parties who will benefit from the solution to contribute a fair share of costs according to their own responsibilities and the benefits they realise.	Addressed
Ofwat	Timescales for the improvements to be made to the regional plans are tight. While this has partly been accommodated by a formal delay to English WRMPs from August to October (Welsh WRMPs are expected to be submitted in September) the short timescales mean that regional groups will have to prioritise their work carefully to make the necessary improvements by the next consultation.	Addressed
Ofwat	We expect completed data tables to be published by all groups with the next round of regional plans so that the plans are transparent and regulators / stakeholders are able to understand and comment on the decisions made. Linked to this, plans published in the autumn should be as self-contained as possible to allow stakeholders to understand the main points without needing to review a long list of previous documents or appendices.	Addressed through WRSE draft regional plan and Southern Water draft WRMP documentation.
Ofwat	Clarify what the estimated drought resilience is at the start of the period and address inconsistencies in the documentation on water needs to achieve 1 in 500 year drought resilience.	Addressed through WRSE draft regional plan and Southern Water draft WRMP documentation.
Ofwat	Work with environmental regulators to understand and prioritise changes to abstraction to deliver a net gain to the diversity and quality of the environment and enable a better overall outcome.	Addressed through WRSE draft regional plan and Southern Water draft WRMP documentation.
Ofwat	Clarify what level of personal consumption WRSE expects to see by 2050 and detail its approach to achieving demand side savings to give confidence in their deliverability	Addressed through WRSE draft regional plan and Southern Water draft WRMP documentation.
Ofwat	Make sure it is considering the full range of options available by, for example, clarifying how it has worked through the potential options available to enhance existing assets before looking to new solutions and exploring the use of drought permits and orders beyond 2040.	Addressed through the options appraisal process (s6 of the Tech Report) and the Contingency Plan (Annex 22).
Ofwat	Set out how it is profiling changes in drought resilience, personal consumption, and leakage across the planning period to optimise outcomes	Addressed through WRSE draft regional plan and Southern Water draft WRMP documentation, and through sensitivity testing of difference policy choices and dates for achieving them.
Ofwat	Explain its approach to adaptive planning more clearly including why pathway branch points are excluded in the first 15 years.	Addressed through WRSE draft regional plan and Southern Water draft WRMP documentation, and through revised pathways and decision points being adopted in the plans.
Ofwat	Clarify the cost information used in the plan and confirm which options are selected at what time and why they represent a low regret least cost programme	Addressed through WRSE draft regional plan and Southern Water draft WRMP documentation, through inclusion of additional information.
Ofwat	Build on the approach taken in the main plan summary document to present the work in a way that is transparent and accessible to stakeholders. This is a particular challenge for WRSE because the complexity of the approaches used risk making the plan difficult for stakeholders to engage with.	Addressed through WRSE draft regional plan and Southern Water draft WRMP documentation.
Ofwat	WRSE is looking at some potentially very deep reductions in water abstraction in the long term. This is using a 'central' scenario that is not explained in detail. WRSE should focus on using local understanding from engagement with environmental regulators, water companies and stakeholders on what needs to change and by when to inform its prioritisation of actions and investigations to achieve the best long-term outcome and set these out clearly. This area is critical to the plan because it is driving a large component of the need.	Addressed through WRSE draft regional plan and Southern Water draft WRMP documentation, and through revised adaptive planning pathways and decision points, and through further explanation of scenarios underpinning the pathways.

Respondent	Feedback	Response
Ofwat	WRSE states that 625Ml/d of water is required to provide resilience to a 1 in 500 year drought event by 2040 which represents a significant proportion of the overall water needs up to 2040. However, the supply demand balance tables for dry year annual average 1 in 100 year and 1 in 500 year droughts included in Annex 1 do not align with the figure included in the main plan. WRSE should clarify which figures are correct.	Addressed through WRSE draft regional plan and Southern Water draft WRMP documentation, all figures have been updated.
Ofwat	The WRSE plan says it will achieve 1 in 500 year drought resilience by 2040 (as per WRPG 4.7). A sensitivity test has been carried out to move the end of the first branch from 2040 to 2035 with limited impact. However, we note that the fixed 2040 drought resilience target may be obscuring sensitivity caused by changing the adaptive pathway trigger point. We suggest that both the drought resilience target date and adaptive pathway trigger point date are tested individually, and in combination. This should include flexing the 1 in 500 year drought resilience to 2050 where more flexibility is considered appropriate to identify if there are significant cost savings or additional benefits that could be achieved from moving dates	Addressed through WRSE draft regional plan and Southern Water draft WRMP documentation, and through sensitivity testing of difference policy choices and dates for achieving them.
Ofwat	WRSE is not planning to use Drought Orders or Permits as options after 2040, except for events in excess of the 1 in 500 year return period. Annex 1 states that scenarios have been tested comparing the cost impact of using or not using Drought Orders and Permits, however the results are not presented. WRSE should explore the cost, benefit and option selection impact of retaining the use of some Drought Orders and Permits beyond 2040. This is important to avoid unnecessary costs from resource development and to avoid the associated environmental impact that the additional development likely to arise from ruling out the use of Drought Orders and Permits could bring.	Addressed through WRSE draft regional plan and Southern Water draft WRMP documentation, and through sensitivity testing of difference policy choices and dates for achieving them.
Ofwat	WRSE has generated public water supply and demand forecasts up to 2100, with intermediate points at 2040 and 2060. We welcome the application of this planning horizon as it has allowed the plan to explore a wide range of potential futures and the uncertainties associated with these. The impact of the pandemic is noted in the plan, however WRSE should clarify whether or how this influenced the public water supply demand projections. WRSE should consider the Ofwat common reference scenarios on water resources shared 17 November last year and should factor these – and any amendments following consultation – into the regional plan as appropriate.	Addressed. WRSE considered Ofwat's common reference scenarios in defining the 9 supply-demand situations which were modelled to create a RBVP. We have explained the impact of Covid upon our demand forecast in this submission (Annex 7).
Ofwat	WRSE's work to forecast non-public water supply water needs and integrate these within the investment model is welcomed. WRSE should continue to explore non-public water supply water needs and refine forecasts based on engagement with other sectors, ensuring potential growth areas are investigated.	Addressed – WRSE will continue to engage with other sectors.
Ofwat	Demand reduction options are shown to represent more than half (54%) of the total water resource gains for the 2025-2040 plan, and 56% of the 2040-2060 plan. Despite this, WRSE does not specifically commit to achieving the 110 l/h/d personal consumption level by 2050, as included in the National Framework. WRSE should: • Clarify what level of personal consumption it expects to reach by 2050. • Detail the demand management options and glidepaths to meeting the demand reductions expected. • Present the impact that different demand profiles have on decision making, and therefore costs and benefits, in the period up to 2040 and beyond. • Test whether uncertainty associated with the achievement of company-led demand reduction can be managed within its adaptive pathways. • Consider including the uncertainty in government initiatives (which is stress tested) in its adaptive pathways so these can be used to plan supply and demand options to resolve potential future deficits.	Addressed through WRSE draft regional plan and Southern Water draft WRMP documentation, through inclusion of additional information in the draft plan.
Ofwat	WRSE includes a range of supply option types in its emerging plan. These include transfers, reservoir expansion, new reservoirs, water recycling, groundwater aquifer storage and recovery, and desalination. However, WRSE should:	Our options appraisal approach is set out in s6 of the Tech Report and Annex 12.

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	• Clarify how it has worked through the potential options available to enhance existing assets before looking to new solutions. In particular, we note that WRSE has looked at 12 new reservoirs, but only one reservoir expansion scheme. This is alongside 16 desalination options, which remain a prominent option type in the low adaptive scenario. • Make sure that the range of options within each option type is sufficient to allow real choices between them, including comparably sized alternative options with similar lead in times. • Explain how network improvements have been considered as options alongside new sources of supply, including pipe, pump and treatment work constraints, and treatment works loss recovery. • Set out how third-party options have been included and considered alongside other options and present the options selected clearly. • Ensure it has updated individual company data, assumptions or forecasts and incorporated these appropriately into the regional planning process, as per WRPG section 2. • Engage with WRE through subsequent reconciliation rounds, to understand whether there are potential transfers from the East region into the South East as part of a best value plan.	
Ofwat	While it is encouraging that WRSE has considered over 200 catchment options the water resource benefits of these options are not clearly explained. Where the water resource benefits are low or absent it may be appropriate to include these options in different plans and pick up on broader benefits, for example, the water quality benefits. WRSE should clarify the benefits expected from these schemes and why they are best included in a water resources plan rather than drainage and wastewater management plans or through the business plans	Addressed through WRSE draft regional plan and Southern Water draft WRMP documentation, with clearer explanation of links to Business Plans, DWMPs etc.
Ofwat	The emerging plan discusses non-public water supply users in WRSE, quantifying the volumes of water abstracted across multiple sectors, and how this may change over the planning horizon. While a number of multi-sector options are identified, further development is required on potential water resource benefits, particularly to the public water supply sector. WRSE should clarify how it will continue to develop these options.	WRSE is continuing to engage with other sectors over these options.
Ofwat	Plans must compare options appropriately to arrive at the right outcomes. We have identified a range of areas that require further focus which are set out below.	No response required
Ofwat	WRSE's emerging plan is not yet a best value plan. Instead, WRSE has published a best value method statement which sets out how it plans to arrive at a best value plan. We have not commented on the best value method statement in depth as part of this review. However, we note the complexity of the approach, and we would like to work with WRSE to further understand how it will be applied and to make sure it is achievable in the time available.	No response required
Ofwat	The WRSE emerging plan is not always clear or consistent on which options are being selected when and what is driving the selection. For example, the Severn Thames River Transfer is included in all three pathways (high, medium and low) in some parts of the plan (see figure 1.3 annex 3) but excluded from the low pathway in others (such as page 16 in the main report). WRSE should explain more clearly which options are selected at what time and why they represent a low regret least cost programme.	Addressed through WRSE draft regional plan and Southern Water draft WRMP documentation, and through clearer explanation of the reported pathway and sensitivity testing around the adaptive plan.
Ofwat	WRSE has set out an emerging least cost adaptive plan up to 2075. However, this has not been compared to alternative least cost adaptive plans in the submission. We would like to see the range of least cost plans produced up to 2100, and evidence of comparison across these. Justification for the preferred least cost adaptive plan, in relation to alternatives with varying assumptions, should then be presented clearly. The difference between the preferred least cost adaptive plan and the best value adaptive plans, which are being developed, should then be used to support decision making around the preferred best value adaptive plan.	Addressed through WRSE draft regional plan and Southern Water draft WRMP documentation, through inclusion of information on comparisons between best value, least cost and alternative plans.
Ofwat	When WRSE has developed a best value plan it should compare its cost against the least cost plan. The difference in expenditure should be clearly stated and cost drivers fully explained (as per WRPG section 10.4). It is important that WRSE clearly identify the bill impacts of the proposed programmes and engage	Addressed through WRSE draft regional plan and Southern Water draft WRMP documentation, through

Respondent	Feedback	Response
	with customers on the issue (as per WRPG 4.1.1) to inform and justify best value plan selection as part of wider decision making.	inclusion of information on comparisons between best value, least cost and alternative plans.
Ofwat	WRSE has identified carbon (both operational and embodied) as a best value metric and plans to use the metric to optimise the plan in the next phase of work. WRSE should: • Expand on its methodology for optimising on carbon. • Explore the sensitivity of decision making to carbon to identify tradeoffs. • Demonstrate that carbon is being considered as part of decision making rather than simply mitigating emissions after decisions have been made.	We have presented our consideration of greenhouse gas emissions and how we are contributing to carbon net zero in s10 of the Technical Report.
Ofwat	Adaptive planning is a more sophisticated way of managing known uncertainties than lumped target headroom (WRPG section 10.8) and we support WRSE taking this approach. However, the choice of adaptive pathways and trigger points should be made based on the uncertainties and drivers of the uncertainties at that time. It should be clear why a date has been selected for a pathway to diverge and sensitivities to the investment programme should be explored by varying this date. WRSE should revisit and explain its thinking on the exclusion of branch points in the first 15 years and explore whether uncertainties are present which justify branch points prior to 2040	Addressed through WRSE draft regional plan and Southern Water draft WRMP documentation, and through revised adaptive planning pathways and decision points, and through further explanation of policy choices and dates for achieving them.
Ofwat	WRSE has used an investment model to optimise across nine situations representing varying futures and has selected programmes of options for each. However, it is not always clear what data and futures are represented by the situations, and which has been presented for the regional reconciliation. It is also not clear which situation and associated programme is preferred within the least cost adaptive plan presented within the submission. WRSE should clarify the situation presented at regional reconciliation, and whether the associated programme of options constitutes the preferred programme within the least cost adaptive plan. WRSE should also explain how the situations map to the Ofwat long term planning scenarios.	Addressed through WRSE draft regional plan and Southern Water draft WRMP documentation, and through revised adaptive planning pathways and decision points, through further explanation of policy choices and dates for achieving them, and through regional reconciliation report published alongside the draft regional plan.
Ofwat	WRSE has not yet produced a monitoring plan and it should develop this alongside the best value adaptive plan. The monitoring plan should include trackable metrics that assess and measure the progress and performance of the adaptive plan through time and support decision making around switching between alternative pathways.	Our monitoring plan is included in Annex 11.
Ofwat	We are concerned that the WRSE investment model is unable to balance supply and demand in the absence of all Government-led demand management activities beyond water labelling. This dependency presents a risk to the plan which WRSE needs to understand and manage.	Addressed through WRSE draft regional plan and Southern Water draft WRMP documentation, through further explanation of policy choices and dates for achieving them and sensitivity testing around Government led interventions
Ofwat	The metrics mainly represent different aspects of drought resilience, for example R1 (uncertainty of option supply/demand benefit (incl climate change)), R4 (availability of additional headroom), A1 (Expected time to failure), A2 (Duration of enhanced drought restrictions) are all water resources focused and therefore risk introducing duplication. Some metrics can be counter-intuitive, for example: • R3 (Risk of failure of planned service due to other physical hazards) is included alongside water resource focused metrics within the reliability metric and could cancel out or be misinterpreted at this aggregate level. • R1 could be captured via headroom or valued as an uncertainty range in Ml/d rather than as a score and R4 is expected to be minimal once 1 in 500 resilience plus climate change has been accounted for. • A3 (operational complexity and flexibility) is characterising effluent reuse schemes as low resilience compared to other options due to reliance on chemicals. We note that chemical availability is a risk across supply options and it needs to be clearer why WRSE considers this to be a higher risk for effluent reuse than other options. The plan is not entirely clear on how the resilience framework fits with the best value metrics to ensure there is a balanced consideration of resilience and broader best value assessment.	Our approach to selecting the Best Value Plan is presented in s7 of the Technical Report

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	It increases the complexity of the remaining work. WRSE already has a lot of work to do to get to a best value plan before the next round of plans and may wish to consider whether the resilience framework is critical to the success of the plan.	
Ofwat	Where the regional plan selects sub-water resource zone resilience schemes, WRSE should consider and justify schemes that are 'non-drought resilience only' and do not contribute to the supply demand balance via requests in company business plans where appropriate. While these options can be described in the regional plans and WRMPs, they should have some benefit to or impact on one or more components of the supply demand balance to be considered as regional plan / WRMP schemes (as per WRPG sections 8.2).	We have presented our approach to non-drought resilience schemes in s6 of the Tech Report
Ofwat	WRSE acknowledge that there is a risk of double counting benefits and dis-benefits particularly in relation to the environmental and resilience metrics. As far as possible, metrics should be discrete and independent measures of plan performance. There should be a clear line of sight from objectives, through to metrics designed to measure various associated aspects of plan performance, through to outcomes. Sub-metric scores should be explained and used to justify the best value plan selected in addition to aggregate metric performance to ensure transparency and to avoid perception of a 'black box' approach. Where investment is needed beyond least cost the value of the additional benefit needs to be presented and the robustness of the valuation data is important for significant areas of investment.	Addressed through WRSE draft regional plan and Southern Water draft WRMP documentation, through inclusion of best value plan metrics and explanation of metric performance under different plans (best value, least cost, best environmental and societal etc)
Ofwat	Decision making should be transparent and WRSE has provided a narrative and informative visuals which are accessible to stakeholders. However, WRSE should describe more clearly why options are selected and when, including cost, benefit and lead in time data to justify the selected plan. Where programme scheduling influences the selection of a higher cost and / or lower value option this should be explained. WRSE should also provide more detail on how strategic decisions are made within the group, who is involved in the process and how it will transition to a best value plan that can inform WRMPs.	Addressed through WRSE draft regional plan and Southern Water draft WRMP documentation, through further explanation of option selection and testing around strategic option timing and selection
Ofwat	It's important that the plans are sufficiently ambitious and are in line to achieve agreed outcomes. Stakeholder engagement must be meaningful, have sufficient reach and be appropriately targeted. We have identified a range of points relevant to these areas that require further focus which are set out below.	No response required
Ofwat	The WRSE plan is broadly in line with the scale of challenges articulated in the national framework though water requirements have increased significantly. WRSE has considered water demands outside public water supply and has included 30Ml/d capacity for paper and power sectors. However, it's not yet clear how that will work in practice at an options level. WRSE should develop this further in the next iteration of the plan.	We will continue to work with WRSE to consider the impact of future demands from outside public water supply needs. Our dWRMP24 is focussed on PWS requirements only
Ofwat	WRSE recognises that further work is required to achieve alignment between the different water-related planning activities such as drainage and wastewater management plans and flood risk management. WRSE should continue to build on this area.	WRSE has continued to work closely with the companies in relation to their WRMPs and DWMPs.
Ofwat	The WRSE approach to stakeholder engagement has been positive. It has hosted a range of well attended webinars and supported the launch of all five regional groups on 17 January. WRSE presents a broad range of questions for consultation and has set up an online system to capture responses. WRSE has also engaged extensively through a series of workshops. WRSE should detail how this engagement will shape its plan.	Addressed through WRSE draft regional plan and Southern Water draft WRMP documentation, with explanations of how engagement has informed the plan, including what has changed since the emerging regional plan.
Ofwat	WRSE has published a wide range of documentation that includes a particularly helpful and clearly set out interactive summary of the plan. However, there are many annexes spread across the WRSE publications page and information is divided between these in a way that makes it challenging and time consuming to find. For example, it's not clear specifically what information would be included in Annex 2 'the solution' or Annex 3 'our emerging plan'. WRSE should address this for its next consultation and publish its data tables.	Addressed through the WRSE draft regional plan publication. Two Technical Annexes are to be published, supporting a Consultation Document. The Annexes have been restructured since the emerging regional plan to provide a stepped approach to the preparation of the plan and presentation of the draft regional plan proposals.

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Ofwat	The WRSE emerging plan is not sufficiently clear on costs. Programme costs are presented as £8bn but it is not clear what this includes and is therefore not helpful for customers. Within this total the plan says that supply side option totex is £1.5bn in the preferred programme. However, this appears less than the cost of some of the infrastructure options individually so it's not clear what is included in the figure. WRSE should clarify the cost information included in the plan and present it on an option basis.	We have set out Totex costs and bill impacts of the dWRMP24 in s7 of the Tech Report
Natural England **Feedback on WRSE Emerging Regional Plan**	**Summary advice** The consultation documentation provides a least cost emerging plan that has identified the challenges and broad scale of water supply deficit that the different sectors and the environment may face now and in the future. It appears to solve the water supply deficit with a range of solutions and options. However, the information provided is very limited and not always coherently placed in terms of the detail and evidence most relevant to Natural England. Due to this, Natural England cannot conclude whether the options selected in the plan provide the most beneficial environmental outcomes to meet all statutory and policy requirements for environmental protection, improvement, and restoration.	We are providing our dWRMP24 options information in an annex.
Natural England	**Environmental legislation and policy** Natural England welcomes reference throughout the documentation to the environmental objectives set out in the Government's 25 Year Environment Plan1 and the Environment Agency's Environmental Destination Guidance. It is good to see that this has due regard in the scenario planning and modelling. Whilst it is positive that the Environmental Destination guidance is acknowledged, there is little detail on how and whether all requirements within this guidance have been addressed. There is also a general lack of reference and incorporation of the relevant environmental legislation and statutory obligations that apply to the emerging plan. Designated sites (e.g., Sites of Special Scientific Interest (SSSIs), Marine Conservation Zones (MCZs) and Ramsar sites), protected landscapes, protected species and priority habitats are protected under environmental legislation (see Annex 2), but only European sites and the Habitats Regulations are mentioned. There are also places where Natural England's regulatory and advisory role has not been referenced or recognised. Natural England can provide examples of where this is lacking detail if necessary.	Our dWRMP24 contains information such as environmental assessments and designations.
Natural England	**Environmental assessments** The following documents were not included for review during this consultation, and Natural England has not seen recent versions of these: • Updated environmental assessment including Strategic Environmental Assessment (SEA) and Habitats Regulations Assessment (HRA) • Collated list of all proposed supply-demand options, with details behind the decision making for the scenario planning. For this reason, Natural England's response in this letter is only focused on the consultation documents listed above, and the questions provided within the main consultation document. We recognise that WRSE has taken on board previous advice from Natural England in past consultations and reviews. We advise that, before submission of the final draft best value plan, further work is done, or details are provided to demonstrate that the challenges set out in the aforementioned Environment Agency guidance and statutory duties within relevant environmental legislation are being met. For more information, please see Annex 2 of this letter, and the attached paper 'Regional Water Resource Planning and the natural environment' (Natural England, January 2022).	We have carried out the HRA and SEA – see Annex 18 and 20.
Natural England	**Options detail** There are inconsistencies between the documents that require attention. For example: In the main consultation document, the Test and Itchen catchments are mentioned as having abstraction drought orders in use. However, in Annex 3 only the River Test drought permit is mentioned (it is perceived that the information in the Annex 3 is correct, and it includes the Itchen, but it is not clear). Not all RAPID schemes appear to be included in the supply options, and some are named differently and have differing timelines such as the London Reuse and Grand Union Canal options.	We have provided additional details in the dWRMP24.

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	Section 5 of Annex 3 refers to reclaimed water, water recycling and effluent reuse. Natural England understands these to be the same thing, and we suggest that a consistent naming approach should be adopted to avoid confusion. Water Recycling seems to be the most appropriate and most accepted by customers.	
Natural England	**Next steps** As mentioned above, in preparation of the best value plan, we expect more detail to be provided on the supply options, justification, and environmental assessments. Considering the water companies within the south east will be consulting on their WRMP24s this year, it will be important to ensure the regional plan is environmentally compliant before it is used for the WRMP process. Natural England expects that issues raised above will be addressed soon by WRSE and additional information will be provided. Please take Natural England's capacity to provide advice into consideration within the timelines for developing the best value plan. We look forward to continuing to work with WRSE on the best value plan.	We have included option fact files (Annex 13) in the WRMP24
Natural England	Natural England sees the following as the key interactions between Regional Water Resource Planning (including setting a long-term environmental destination) and nature conservation legislation/policy: • As the Environment Agency's National Framework for Water acknowledges, the process of Regional Water Resource Planning must comply with Habitats Regulations Assessment (HRA) legislation. As such, the water companies forming Regional Groups (jointly and severally the 'competent authority' for the purposes of HRA) must: ▪ Carry out an HRA of the implications for European site(s) of each individual water transfer project as this comes forward during the RAPID process; ▪ Carry out an HRA of the implications for European site(s) of each regional plan (including any planned water transfers integrated into such plans). • HRA is a two-stage process that considers: (i) the likely significant effects (LSE) of plans or projects (either alone or in combination with other plans or projects) for European site(s); and (ii) if LSE cannot be excluded, any adverse effects from the plan or project (either alone or in combination with other plans or projects) on the integrity (AEOI) of European site(s). Plans or projects may not be permitted unless AEOI can be ruled out with certainty (beyond reasonable scientific doubt) – unless there are imperative reasons of overriding public interest (IROPI) and the legal tests in HRA legislation for an IROPI derogation are satisfied. • When developing Regional Plans and deciding on water transfers, the water companies forming Regional Groups (jointly and severally the 'competent authority' for the purposes of the Habitats Regulations) should also consider their wider duties under Regulations 9(1) and 9(3) of the Habitats Regulations. • The Wildlife and Countryside Act (1981) contains a general duty on authorities (including statutory undertakers) to further the conservation of Sites of Special Scientific Interest (SSSIs). • The Marine and Coastal Access Act (2009) contains a general duty on public authorities (including statutory undertakers) in respect of the conservation objectives of Marine Conservation Zones (MCZs). • The Natural Environments and Rural Communities Act (2006) places a general duty on public authorities (including statutory undertakers) to conserve biodiversity. • The Government's 25 Year Environment Plan and the forthcoming Environment Bill contain policy and emerging legislation that are relevant to the Regional Water Resources Planning process. This note has primarily been written with regard to the requirements for England only, however, Natural Resources Wales (NRW) are the statutory nature conservation body for Wales. The following section is also applicable to Wales: 1.0 Regional Water Resource Planning and Habitats Regulations Assessment (HRA) under the Conservation of Habitats and Species Regulations (2017) (Habitats Regulations)	Our dWRMP24 included an HRA in Annex 20.

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	2.1 General duties under the Habitats Regulations For information on your other environmental duties with regard to Welsh legislation refer to the Water Resources Management Plan guidelines (including supplementary guidance), Welsh Government's guidance and guiding principles for water resources planning, NRW's information on protected species and areas of land, industry guidance (such as UKWIR environmental assessment for water resource planning), or contact WREPP@cyfoethnaturiolcymru.gov.uk. More detail on the above is provided in Annex 1 to this note. Please note, throughout Annex 1, the document mentions what you 'should do/look at/consider as a Regional Group or a water company forming a Regional Group'. This is referring to instances where an authority (including statutory undertakers) has a general duty under the legislation being discussed and therefore relates to what water companies forming regional groups need to consider as part of their statutory duties.	
Natural England	Regional Water Resource Planning and Habitats Regulations Assessment (HRA) under the Conservation of Habitats and Species Regulations (2017) (Habitats Regulations) - Regional plans, water transfers and HRA: As set out above, regional plans and water transfers must be subject to HRA of their implications for European site(s). Where water transfers are integrated into regional plans they will be assessed as part of the HRA for that regional plan. However, water transfers will also be subject to HRA as they come forward on an individual project basis, including the strategic resource options being prepared as part of RAPID. - Competent authority: As the competent authority for the purposes of the Habitats Regulations, the water companies forming Regional Groups will be jointly and severally responsible for carrying out HRAs. - HRA is a two-stage process: (i) which considers whether the plan or project (either alone or in combination with other projects or plans), will have likely significant effects (LSE) on any European sites(s); and (ii) if LSE cannot be excluded, an Appropriate Assessment (AA) must be carried out of whether the plan or project (either alone or in combination with other projects or plans), will have an adverse effect on the integrity (AEOI) of any European site(s). There must be certainty about the absence of AEOI and if AEOI cannot be ruled out beyond reasonable scientific doubt, the plan or project may not be permitted, unless a derogation can be granted for imperative reasons of overriding public interest (IROPI). IROPI derogations must satisfy the legal tests set out in HRA legislation, including the requirement to provide compensatory measures. Please see Defra's and Welsh Gov/joint guidance 'Habitats regulations assessments: protecting a European site1 ' for more information and guidance on carrying out an HRA. - HRAs should also consider impacts on any land that is outside, but functionally linked to, designated sites. The indirect adverse effect which a deterioration in the quality or function of functionally linked land could have on a protected site must be scrutinised in the HRA in the same way as direct effects or acts carried out on the protected site itself. 'Functionally linked land' means those areas of habitat outside of the boundary of a European site(s) that might fulfil functions "…in terms of supporting the populations for which the state was designated or classified" . An example of functionally linked land would be, in the context of European sites, the land outside of a designated site that a designated species uses for feeding and that without that land, the range of species/assemblages for which the sites are designated might not be there. - Natural England and Natural Resources Wales are the statutory nature conservation body for the purposes of HRA and must be formally consulted on the regional plans/water transfers if there are likely significant effects on a European site(s) and therefore an Appropriate Assessment is required. Natural England and Natural Resources Wales's role as statutory consultees is to offer ecological advice to the regional group so that the water companies forming Regional Groups (jointly and severally the 'competent authority') can apply the relevant legal tests and determine whether to adopt and undertake the regional plan/water transfer under the HRA legislation. Natural England and Natural Resources Wales strongly recommend that Regional Groups engage with us early in the HRA process, to agree the approach and reduce the risk of holding up the plan/water transfer process.	Our dWRMP24 included an HRA in Annex 20.

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Natural England	Regional Water Resources Planning and general duties under natural environment legislation Regional Groups should have regard to the below general duties when carrying out water resources planning, including preparing/adopting regional plans and proposing water transfers.	See below.
Natural England	General duties under the Habitats Regulations. The Habitats Regulations places a general duty on water companies as 'competent authorities' when carrying out their functions. The duty to protect, conserve and restore European sites must be considered in relation to regional plans and water transfers, including those which do not require an appropriate assessment (discussed in section 1 above). The provisions in Regulation 9(1) and 9(3) of the Habitats Regulations broadly amount to a legal duty on water companies to: (i) in relation to the marine area, exercise their functions which are relevant to nature conservation so as to secure compliance with 'the requirements of the Directives'; and (ii) when exercising functions, to have regard to 'the requirements of the Directives' so far as they may be affected by the exercise of those functions. 'The requirements of the Directives' means the requirements of the Habitats and Birds Directives, which (following Regulation 3A(3)) is to be construed as if the objectives of the Directives also included the site management objectives referred to in Regulation 16A(2) of the Habitats Regulations. Article 6(2) of the Habitats Directive broadly requires the taking of appropriate steps to avoid the deterioration of European sites. Regulation 16A(2) broadly speaking sets out an objective to, so far as is proportionate, maintain at or where appropriate restore sites to Favourable Conservation Status (FCS). This broadly translates as a legal duty on water companies to: (i) in relation to the marine area, carry out regional planning and water transfers in a way that avoids the deterioration of European sites and (so far as is proportionate) maintains or restores them to FCS; and (ii) in all other cases when carrying out regional planning and water transfers, to have regard to the requirement to avoid the deterioration of European sites and (so far as is proportionate) maintain or restore them to FCS3. As a result of the above, if there are European Sites within a water company's area which may have limited restoration potential because of the trajectory of water supply balances, then they should be considered in the overall long-term supply balance calculations, even if there isn't a direct impact on these sites as result of a plan's proposals.	Our dWRMP24 included an HRA in Annex 20.
Natural England	General duty under the Wildlife and Countryside Act 1981 - Section 28G of the Wildlife and Countryside Act 1981 places a duty on public authorities (including statutory undertakers such as water companies) to take reasonable steps, consistent with the proper exercise of their functions, to further the conservation and enhancement of Sites of Special Scientific Interest (SSSIs) and build this into your long-term environmental destination calculations. For more information on how your plans should take account of SSSIs, please see the Government's on 'Sites of special scientific interest: public body responsibilities' 4 - The National Framework for Water's 'Long-Term Water Resources Environmental Destination' guidance expects the regional groups to consider SSSIs as they develop their regional plans and build this into their long-term supply demand balance calculations. - Riverine SSSIs will have flow targets attributed them under the Common Standards Monitoring Guidance (CSMG), these are different from Water Framework Directive (WFD) targets and will need to be reached in order to allow sites to reach favourable condition. While these targets have been set for rivers, there are none such in relation to water resources for other water dependant SSSIs (e.g. wetlands, ditches, lakes). As such, for sites that fit into the latter, it will be difficult for regional groups to develop water budgets and use these in their long-term environmental destination assessments and bespoke, local discussions may be required for these. - There may be specific options selected within the regional plans that, when implemented, may require assent/consent under the Wildlife and Countryside Act 1981. See the Government's advice on consent 'Sites of special scientific interest: managing your land' 5 and assent 'Sites of special scientific interest: public body responsibilities'	All of our options include environmental assessments and recognise environmental designations.
Natural England	General duty under the Marine and Coastal Access Act (2009) - Section 125 of the Marine and Coastal Access Act (MCAA) (2009) places a general duty on public authorities (including statutory undertakers) to exercise their functions in a way that best furthers the conservation objectives of a Marine	All of our options include environmental assessments and recognise environmental designations.

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	Conservation Zone (MCZ) or, where that is not possible, least hinders them. - Regarding implementation of regional plans, it is worth noting that there is also an obligation to notify Natural England where a public authority's function might significantly hinder the MCZ's conservation objectives or significantly affect an MCZ. - the impacts of taking more water out of a freshwater system which could result in changes to hydrological function downstream in coastal and marine systems.	
Natural England	Biodiversity duty under the Natural Environments and Rural communities Act (2006) - Under Section 40 of the Natural Environment and Rural Communities Act 2006, every public authority (including statutory undertakers) must in the exercise of its functions have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity. Conserving biodiversity in this context could include restoring or enhancing a population or habitat7 . - Please see Defra's guidance on the Natural Environment for more information on the general biodiversity duty on public authorities8 . - You should consider the above when carrying out regional water planning activities. You should take legal advice on the practical implications of this on the development of your environmental destination work.	All of our options include environmental assessments and recognise environmental designations.
Natural England	Regional Water Resources Planning and natural environment emerging legislation and policy Regional Groups should have regard to the below emerging legislation and policy when carrying out water resources planning, including preparing/adopting regional plans and permitting water transfers	All of our options include environmental assessments and recognise environmental designations.
Natural England	The 25 Year Environment Plan - The Defra 25 Year Environment Plan states: "We will achieve a growing and resilient network of land, water and sea that is richer in plants and wildlife this includes[…] creating or restoring 500,000 hectares of wildlife-rich habitat outside the protected site network, focusing on priority habitats as part of a wider set of land management changes providing extensive benefits." - The Defra 25 Year Environment Plan has ambitions to achieve a clean and plentiful water supply including "improving at least three quarters of our waters to be close to their natural state as soon as is practicable by: o Reducing the damaging abstraction of water from rivers and groundwater, ensuring that by 2021 the proportion of water bodies with enough water to support environmental standards increases from 82% to 90% for surface water bodies and from 72% to 77% for groundwater bodies. o Reaching or exceeding objectives for rivers, lakes, coastal and ground waters that are specially protected, whether for biodiversity or drinking water as per our River Basin Management Plans. - Defra's 25 Year Environment Plan encourages the growth in natural capital and measurement of ecosystem services. It states that "over coming years the UK intends to use a 'natural capital' approach as a tool to help us make key choices and long-term decisions. For further information on natural capital, please see the information on Enabling a Natural Capital Approach (ENCA)	All of our options include environmental assessments and recognise environmental designations.
Natural England	Environment Act. The Environment Act (2021) received royal assent on the 9th November 2021. Over the next few months and years, the secondary legislation and guidance required by the Act will be drawn up and come into force. Not all the components of the Act will come into force immediately after Royal Assent, for example Biodiversity Net Gain (BNG) will follow 2 years later. Targets will be confirmed in October 2022 following a public consultation. Legally binding targets will be established for air particulate matter and at least one in each of the 4 priority areas: air quality, water, biodiversity and waste and resource efficiency. There will also be a target to halt decline in species abundance. There are powers for the Secretary of State (SoS) to set targets in relation to people's enjoyment of the natural environment. The Environment Act will contribute to the recovery of our natural environment and improving biodiversity. It will enable localised action to be taken across the country, directing investment in nature where it is most needed.	We have followed the environmental guidance.
Natural England	Nature recovery and net-gain - Local Nature Recovery Strategies (LNRSs) are defined by Defra as "Local Nature Recovery Strategies are a new, England-wide system of spatial strategies that will establish priorities and map proposals for specific actions to drive nature's recovery and provide wider environmental benefits. The requirement for there to be Local Nature Recovery Strategies, what they are	We have followed the environmental guidance.

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	and how they should generally work will be established by the Environment Bill once it completes its current passage through Parliament" 10 - The Environment Act includes the provision for drawing up LNRSs and these may prove to have relevance to the regional plans and SROs. - Natural England encourage that the regional plans look to identify innovative ways, through nature-based solutions, to enhance and restore catchments, from the agricultural to urban landscape, to help improve infiltration and hydrological function. The plans should look at how catchment-based solutions could help to weave hydrological and environmental resilience into systems, reduce pressure from abstraction and perhaps even secure deployable output	
Natural England	Climate change - The Defra 25 Year Environment Plan aspires to "take all possible action to mitigate climate change, while adapting to reduce its impact". - Inherent in the Defra's ambition above is the need to make wildlife more resilient to climate change. There are two key opportunities linked to climate change for wildlife for drought plans: o Reduce the impacts of abstraction and water supply infrastructure from current levels in drought and leave more water to enable wildlife to be more resilience to climate change in its current location. To reduce impacts of abstraction and water supply infrastructure from current levels and leave more water to enable wildlife to adapt to climate change and move, in particular for those freshwater species to avoid saline intrusion by migrating upstream. - Natural England considers climate change from two perspectives: Climate change adaptation: preparing for and dealing with the consequences of climate change, and; Climate change mitigation: minimising climate change by reducing greenhouse gas emissions (e.g. re-establish carbon sinks) - Natural England has developed the 'Climate Change Adaptation Manual (volume 2)11' and advise that the regional groups use this manual to test how climate change resilient their plans are, based on the relative climate change vulnerabilities of priority habitats within their region, and identify ways in which these can be adapted to reduce pressure on species and habitats as we move an unpredictable climate. Further to this, Natural England has also developed the 'National Biodiversity Climate Change Vulnerability Assessment (England)12' GIS model which assesses the vulnerability of priority habitats to climate change. This is based on a climate change adaptation principle for biodiversity. This tool will help you to identify why an area of priority habitat is vulnerable to climate change and the interventions you could take to provide the most impactful increases in climate change resilience building. - Your plan could consider the impact of climate change beyond the availability of water. You should review the cumulative pressures that could affect habitats (protected sites, priority habitats). For example, the link between climate change and eutrophication and how reduced flows/volumes could result in more significant impacts from water pollution.	We have followed the environmental guidance. All of our options take into account carbon impact. We are committed to ensuring our options have minimum impact on the environment.
Natural England	**Abstraction reduction to protect the environment is likely to be the single biggest driver of investment in water resources over the next 25 years. Do you agree with our approach to establishing the appropriate level of abstraction reduction required across South East England? Please explain your answer**. Natural England supports the recognition of the need to reduce abstractions within vulnerable catchments, restore flows in chalk rivers as a priority and assess restoration potential with climate change adaptability in order to achieve flow restoration and ecological recovery. Natural England cautiously welcomes the abstraction reduction approach and phasing across AMPs. However, the information doesn't give Natural England confidence that the following are given equal weighting in this prioritisation approach; European/Habitats sites, Ramsar sites, SSSIs, MCZs (where appropriate), and water-dependant protected species and priority habitats outside of chalk streams. Natural England requires more detail to satisfy that all of these issues are being considered. Below are some aspects that should apply: The prioritisation of catchments should not exclude or hinder designated sites restoration, many of which are not within waterbodies in the Water Framework Directive (WFD). Selection of priority catchments	We have followed guidance regarding designations and catchment prioritisation.

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	could potentially exclude designated sites that are not within priority catchments or are in the lower reaches of catchments. If we are to achieve the ambitions for designated sites set out in the 25 Year Environment Plan and the Environment Act, as well as duties for nature recovery set out in existing legislation, designated sites condition must be considered and given due weight in the catchment prioritisation. This is not clearly demonstrated. Natural England has previously provided a list of all water-dependent designated sites for the region, and it would be useful to see this mapped with other environmental priorities. This list goes further than (WFD) waterbodies and picks up features for which water supply (or quality) are critical such as ghyll woodlands where the bryophytes rely on the stream flows to survive. Priority water-dependant habitats that should be given equal weight to chalk streams include fen marsh, swamp, floodplain grazing marsh, bog, mire, wetlands, open water habitats as well as priority rivers and headwaters, and there are some priority lakes. There is little to no detail that prioritisation will focus on both surface water and groundwater supply impact, which should be the case. Many aquifers are not at good ecological status for their quantity of water. River flows will help to address issues for rivers, online lakes, and floodplain wetlands (where these are connected to and dependent upon the river for water supply), however many floodplain wetlands are disconnected from the rivers and/or dependent on groundwater supply. For example, one approach that Natural England previously recommended is by using the WFD quantitative status of the underpinning aquifer as a filter for whether there needs to be further assessment with those designated sites within the impact zone. But in many cases more hydrological, geological investigations may need to be undertaken, and it is not clear whether this has been undertaken or has been committed to. Peatlands and peat soils should be considered as a priority alongside other priority habitats. The Government has committed to restore 280,000 ha of peatland by 2050 and, where restoration is not possible, to develop more responsible management techniques. Both of these commitments will require sufficient water to re-wet and maintain a new water balance for dry and degraded peatlands. To support our understanding of new measures for peatlands on water systems and the environment, the UKCEH is conducting a detailed analysis to quantify the relative roles of surface conditions and meteorology on evapotranspiration and its influence on peatland water balance. Following steers from the Lowland Agricultural Peat Task Force, Defra will be exploring the case for new hydrological modelling to calculate water demand for peatlands. We encourage WRSE to scope into the long-term environmental water resource budgets the potential water requirements for peatlands in the region, include new data once it becomes available and to engage with relevant stakeholders on integrating this into your water supply calculations. This is in line with the use of nature-based solutions to climate change, encouraged in the 25 Year Environment Plan. The region has very small areas of peat (compared with other regions) however this is not a reason for this habitat not to have equal weighting. Natural England recommends the term unsustainable abstraction is defined. Assessment and understanding impacts from abstraction should include effects caused upstream of abstraction and groundwater supply as well as downstream. Natural England deems it important to re-emphasise that meeting the statutory obligations to protect the environment must be prioritised in this approach over customer demand. This approach needs to be clear on the methodology for calculating abstraction priorities, where all opportunities and risks are included. Whilst reductions to abstraction are likely to be critical to meet objectives at certain sites, it also seems reasonable to assume that it may not be feasible across all waterbodies that currently are not meeting flow targets. Prioritising catchments that have chronic and additional pressures impacting upon wildlife should also be considered such as poor water quality (from diffuse and point source pollution), flood risk, INNS, etc. The cumulative impact of these issues with low flows will no doubt further increase and exacerbate the problem. Improving the ecological resilience through helping to reinstate more naturally functioning processes is likely to bring significant environmental benefits. This could be an opportunity where some catchments could benefit implementing water quality WFD standard improvements with increased flow.	

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Natural England	**2. We'd like to hear your views on how we prioritise where abstraction is reduced. Please score the following criteria from 1 to 7, with 1 being the least important and 7 being the most important:** 1. Prioritise upper catchments, because headwater ecologies are the most vulnerable and the benefits to flow should improve the whole catchment 2. Prioritise catchments where the impacts on flows are the most severe 3. Prioritise catchments where there is the highest degree of certainty that abstraction reduction will restore flows and deliver environmental improvement 4. Prioritise catchments where people have the most unrestricted access to rivers and streams 5. Prioritise catchments where nature will benefit most, even if public access is restricted 6. Focus abstraction reductions on a smaller number of catchments but fully address the issues they face 7. Focus on a wider range of catchments and partially address their abstraction issues Natural England score the following as priority (a score of 7 being most important): points 1, 2 and 5 score of 7, point 3 score of 6, points 4 and 7 score of 2, and point 6 score of 4. Points 6 and 7 are interchangeable and almost contradict two of the other statements which makes this difficult to judge. There does not seem to be any focus/emphasis on the weighting of catchments with designated sites and/or priority habitats (further detail in the above response to question 1) such as wetlands and coastal habitats. There are wide ranging and being hydrologically linked to rivers they are affected by abstraction. If this has been taken into consideration, this requires further explanation/should be reflected better within this prioritisation list. In regard to point 3, WRSE and the water companies should commit via the regional plan and individual WRMPs to support or lead investigation and assessment to improve certainty. This was quite a difficult exercise as all the criteria in the list will play a part depending on the main drivers at play or the type of environment in question. All of the points listed should be considered going forward but requires updating in line with Natural England's comments in this response.	We have followed the guidance and undertaken assessments for our options.
Natural England	**3. Are there any other factors that you think should be considered as we prioritise where abstraction could be reduced in the future?** There needs to be greater clarity on what is being modelled in terms of abstraction reduction (volumes of both surface and/or groundwater) and how and when water will be returned to the environment. Initially, it is understood that using river flows as proxies for the wider water dependent habitats provides a high-level approach to determine the overall regional situation. However, further work should be undertaken for the best value plan to more accurately determine if environmental obligations and objectives will be achieved for not just rivers but the wider water dependent habitats within catchments. Finer scale mapping of deficits at catchment scale will be needed to ensure water is returned to the environment in a way that has the greatest benefit (and wherever possible includes measures that will enable restoration, enhancement, and creation/expansion of water dependent habitats such as wetlands). Natural England plan to provide WRSE a draft version of Natural England's nature recovery list for the south east region. This spreadsheet provides a comprehensive list of protected sites within the region which Natural England have reason (and evidence) to believe are being impacted by water company activity and assets in relation to water resources (such as abstraction), water quality and other water related issues such as impacts from INNS. This list should be used to support the prioritisation process and Natural England recommend this is mapped against other environmental priorities. These designated sites and the catchments they are located within should be given equal weight to the priorities already outlined, as well what is required within the Environmental Destination guidance. Natural England's nature recovery list has recently been produced to aid the planning of WINEP in preparation of PR24. This information is very much a working progress. Due to sensitivity and for GDPR reasons, the version provided will only be shared with the relevant water companies and for WRSE purposes only at this stage.	We have followed guidance regarding INNS and WINEP investigations.

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Natural England	**4. We have assessed the future water needs of the other sectors that don't rely on the public water supply provided by water companies. Do you agree with our assessment? Please explain your answer.** It is positive to see WRSE has carried out engagement with stakeholders before and during the consultation process. It does appear that further work is needed to develop and bring more certainty of multi sector needs for the region. Other sector needs must be factored into the approach and modelling as these are still water resource challenges that impact on water sources and supply within the environment (and impact the environment). Through this engagement, there most likely will be many opportunities to improve efficiencies. Key messages to other sectors should raise more awareness of the environmental implications/needs and demonstrate why their contribution and better management of water usage is required for nature conservation.	We will continue our collaborative work with WRSE. Our investment modelling relied on WRSE to provide the outputs to ensure no inconsistencies between regional and company plans.
Natural England	**5. We've described our adaptive planning approach and the scenarios we've included in our adaptive planning pathways. Do you agree that we have planned for the right scenarios in each of the pathways with a wide enough range for each of our key challenges through our adaptive planning approach? Please explain your answer.** The consultation documentation sets out that the emerging adaptive plan follows a single pathway to 2040 to meet the 1:500 resilience standard by 2040, then splits into 3 alternative pathways until 2060 in order to address the range of environmental destinations considered (as well as other aspects such as population growth and climate change). From 2060 it appears there are another 9 alternative branches to counter act longer-term uncertainty from climate change. It is stated that this modelling aligns with the Enhanced National Framework scenario. In principle, it is evident that comprehensive modelling and analysis has been undertaken to explore what the likely scenarios will be and ensuring there are different pathways and branches within the emerging plan process to allow for adaptation over time. Natural England supports having the first pathway in place until 2040. It is understood it will take time to plan and secure options, such as SESRO. The information regarding the scenarios and pathways (and the process determining these) is very high level though, and the detail of how this meets statutory obligations around the protection and enhancement of the environment is limited. It is unclear whether for example these scenarios consider the favourable condition targets that are assigned to designated sites within the region such as flow and water quality targets set for SACs, SPAs and SSSIs. Natural England has not been engaged fully in this process and would like to better understand the criteria used to assess each pathway and scenario to validate that environmental statutory obligations can be met within all scenarios (the ability to deliver not only protection of water dependent designated sites, protected landscapes and priority habitats but also assessment/consideration to the restoration objectives for them to deliver enhancement, in particular those restoration objectives set out in Annex 2 of this letter). It is recognised, while further information will be needed in the near future, investigating different scenarios and possibilities to reduce abstraction will take time. Natural England would expect more detail to be provided on the justification and environmental assessments of current and future options put forward. Natural England therefore supports the need for further assessment to be undertaken (sensitivity tests) over time which will inform the decision points of the adaptive plan (that are to be included in developing the best value plan, due for consultation later this year). The first decision point appears to be in 2040 (which the best value plan will aim to achieve 1:500 resilience by this point) and the environmental destination to be achieved by 2050. The documentation does need to demonstrate that the plan will track progress and can be adapted within the first 15 years as there is a risk that WRSE will need to consider alternative options should targets not be achieved for the demand savings and supply options put forward. Can there be clarification on whether there is intention to track this on a more regular basis before 2040 to ensure the deficit continues to be managed strategically, that all options are being delivered as expected and that this evaluation regularly feeds into the decision making for the need of alternative options/solutions, if deficit supply targets are not being met?	We have followed guidance regarding environmental designations and we will fulfil our environmental obligations.

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	WRSE has identified the need to include Government demand management interventions and supply options that pose a higher risk of impact to the environment in order to meet deficits in the longer-term. There is concern around the reliance on this and the need for innovation to come forward and offer less environmentally favourable options that are more acceptable. Natural England advise that, as detailed above, the sensitivity testing is undertaken more regularly and that there is a commitment to undertake investigations to improve certainty around impacts of supply options (which should include hydrological assessment within the zone of influence. And in particular within potentially affected water dependent designated sites and priority habitats) in order to assess the risks using evidence and inform the most appropriate mitigation, compensation options if necessary. New data and more up to date information should be fed into the modelling and decision making in order to keep the environmental assessment and the plan's HRA up to date and compliant. Natural England is now aware that the environmental ambition and assessment methodology has been updated and published (and referenced within Annex 4 of the consultation documentation). Natural England has not been able to review this fully alongside the Regional Plan consultation, and we will do so in due course to understand how previous comments from Natural England have been addressed. However, from an initial read through it appears that there are still aspects from our previous concerns that haven't been fully resolved.	
Natural England	**6. Do you support our approach to treat each pathway as equally likely and not choose a core pathway beyond 2040? Please explain your answer** This seems the logical approach to take, there is a large amount of uncertainty at this stage particularly in terms of population growth and climate change, and how this will change and interact with the environment over time (e.g., the scale of environmental impact from supply options, frequency, and level of impact of the use of drought plan orders/permits, and the water supply needs required to safeguard water dependent habitats and species within catchments). The approach, decision of pathways and the supply options chosen will be subject to ongoing and upcoming environmental assessment (based on the most recent evidence available) which might rule out some. The best value plan needs to be flexible within its adaptive planning approach in order to prioritise and deliver the most appropriate and environmentally compliant solutions.	We have followed guidance regarding populations and climate change. Our dWRMP24 provides information about prioritisation of our Best value Plan.
Natural England	**7. Do you have any other comments on our approach to addressing the challenges that are facing South East England?** In previous comments on WRSE, when the decision is justified as a balance between customer demand and environmental protection, Natural England have stated that WRSE need to fulfil conditions of statutory targets before they consider best value for the customer and demand. The environment must be protected where any approach needs to first ensure the statutory duties to protect and enhance the environment are met (described in Annex 2 of this letter) and this should be a key driving force in the decision making for solutions to the water supply deficit. Natural England will need to fully understand the potential environmental impacts of the different options (including through SEA and HRA) first, and account for these will need to feed into the next modelling scenarios. The approach seems to rely heavily on demand reduction (e.g., through leakage reduction, water efficiency and metering), it is good that this has been put forward to address such a large proportion of the deficit. It is important to be as ambitious as possible to reduce environmental pressure, this should be clearly demonstrated as a key driver. It is already challenging to ensure the environment is protected under current climate conditions let alone that duties to enhance the environment are met, even more so in the face of growth and climate change. Natural England support the more stringent demand management measures. The ambition to aim for a tight Per Capita Consumption around the 110 litres per person per day on average is supported but wherever possible WRSE should encourage a tighter target than this and for this to be customer led where any mechanism including variable tariffs that could contribute to this are explored with customers. It is good to see how the different water companies are approaching this, for example that Portsmouth Water are bringing in metering which is a known	We take our environmental obligations seriously and ensure we follow guidance. We have an ambitious water efficiency programme including our Target 100 work.

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	mechanism to reduce water demand. Natural England also supports Southern Water ambition to continue with the Target 100 option across their supply area. In regard to the current demand management options, it would be useful to know what the baseline is currently. Further information should be provided to demonstrate progress to date and whether the region is on track to reduce demand and achieve the targets associated with those options. Whilst Natural England is aware that there are six main water companies that service water supply within the south east region, there are also smaller inset providers in the region. It is not clear how these providers have been incorporated into the scenario planning, decision making regarding supply/demand options. Natural England require clarity on this particularly to demonstrate that even the smaller abstractions and/or supply options are being taken into account.	
Natural England	**8. Reducing the demand for water through leakage and water efficiency activity contributes to more than half of the total amount of water needed in the first 15 years 10 of the emerging plan, the balance then shifts to include a greater reliance on supply side solutions, particularly in the more challenging future scenarios. Water companies are committed to delivering these reductions, but they are reliant on customers making sustained reductions in their water use over the long-term. Do you think our plan strikes the right balance between demand and supply solutions and the risks associated with delivery of such solutions? Please explain your answer.** Demand management is the main measure for short term reliance for the first 15 years (54% of water required). Demand management measures are important for reducing the everyday use of water and a significant reduction in leakage will offset some of the demand. As above, Natural England encourages WRSE to go for the most stringent leakage reduction possible, especially if it is evident now that for some water companies, they are able to exceed this target of 50% reduction by 2050. It is acknowledged that this target is ambitious though and there is still significant uncertainty around the achievability and timing of this. There is a risk that if the demand savings are not met then the plan may not address the expected secured supply of water. It is important that this is monitored through the sensitivity testing and regularly before 2040 to ensure alternative options are developed if/when necessary. Natural England expects to be consulted and made aware of any alternative options that may be needed. It is important to note, that addressing leakage could cause environmental damage (potentially to water dependent designated sites) e.g., disruption and disturbance from infrastructure changes and new construction required. Within the plan and environmental assessment mitigation to minimise any negative impacts should be identified. Natural England supports the water efficiency and catchment measures put forward. Natural England would like assurance that catchment-based options will be explored further in preparation of the best value plan where insufficient data/gaps are identified and that these are planned into process. The shift to using and relying more on supply options such as desalination and water re-use in more challenging scenarios is concerning. Natural England is aware that some of these options have environmental impacts associated with them, especially in relation to designated sites. Natural England expects that options identified will avoid water dependent designated sites and priority habitats, but there still needs to be considerable assessment and understanding of the environmental impacts in order to avoid/mitigate as far as possible, with compensation as a last resort as assessed through the relevant legislative tests. Natural England would expect a commitment to be made to finding alternatives (e.g., further solutions to customer reductions) to reduce the reliance of having to use more water supply options, particularly those that are higher risk of impact to the environment. Natural England supports the use of media campaigns and the principles of the engagement approach to raise awareness of water use, this is something which should be implemented across the region and the number of outlets expanded where possible to ensure the message is heard wider. There is currently a limited understanding among the general public where drinking water comes from and the environmental impacts of this. Recent customer research undertaken be some of the water companies in the WRSE region show customers value the environment highly and impacts to the environment concern them. This shows if more customers understood this and where aware of the issues water demand would reduce	We have an ambitious leakage reduction target and our leakage figures have been amongst the lowest in the UK.

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	further, further highlighting the importance of this. This also needs to be linked to the environmental and social issues to ensure change does occur.	
Natural England	**9. The plan assumes that the Government will introduce new policies that will support more efficient use of water across society through labelling of water-using products by 2024, introducing a minimum standard for all water using products by 2040 and tightening the water efficiency requirements within the Building Regulations for new homes by 2060. Do you support these interventions and the timing of their introduction? Please explain your answer.** Natural England will support any interventions which will improve water efficiency and drive down demand for our limited water resources. A wide range of measures and interventions are crucial to help raise the awareness of the water resource issue and deficit amongst the public, which is extremely important if people are to reduce water use.	We have an ambitious water efficiency target.
Natural England	**10. Do you think it is appropriate for Temporary Use Bans and Non-Essential Use Bans that reduce demand for water further during droughts to be used as options in this regional plan?** Provided this approach does not result in an increase in the use of potentially damaging drought permits/orders or result in any difficulties for achieving the 25 YEP policies and statutory duties (set out in Annex 2 of this letter), Natural England support the use of TUBs and NEUBs. It is a step that often has to be taken for drought permits and orders to be implemented. It should be stated that every effort is undertaken to manage water resources throughout the year to prevent where possible drought situations. Natural England agree that drought permits and orders should be used as a last resort as they are damaging to the environment, and it is positive that drought permits and orders aren't considered as options after 2040. Natural England would suggest that this is put into context and linked to legislative and policy tests. This approach will help to further reduce water demand during drought and also raises the profile and water shortage with the wider public which could further reduce demand. This may lead to environmental benefits and can sometimes lead to the drought permit or order not being required as it results in the reduction via consumption. It is concerning that there appears to be inconsistent views on this matter. For example, the plan outlines "these schemes coupled with temporary use bans (TUBs) and non-essential use bans (NEUBs) provide the greatest contribution to the future challenges in the Southeast of England." However, individual water company drought plans have noted that TUBs are a last resort, and there will be a move away from relying on drought permits and orders. In the regional plan, there seems to be an expectation that these will form a key option of reducing abstraction in the short term.	We set out our use on TUBs and NEBs in our dWRMP24.
Natural England	**11. Do you agree with the mix of options that provide new water supplies for the region within our plan (reservoirs, desalination, water recycling, new transfers, improved abstraction from groundwater storage and ASR schemes). Do you think that some options should feature more or less in our plan to secure future water supplies? Please explain your answer.** Natural England recognises that the supply-demand scenarios already indicate a challenging future, based on possible increases in demand, climate change and environmental improvements. There appears to be a good balance that attempts to secure resilience to drought and climate change. However, we nevertheless feel that more transparent and systematic assessment of future environmental requirements is undertaken and more understanding of environmental impacts to avoid damaging designated sites and priority habitats (and incorporate enhancement) and manage down carbon costs. There should be every effort taken to minimise reliance on water from other regions and use the water resources within region more efficiently, this is recognised in the emerging plan, yet STT and some other cross-regional transfers still feature prominently. There was a lack of biodiversity net gain opportunities in WRMP19 and policies, environmental legislation has changed since then. Net gain opportunities should be identified as early as possible and aspire to promote climate adaptation for vulnerable habitats and species. Prioritising abstraction reduction is a positive inclusion. When prioritising for environmental improvement the use of site specific, recent baseline data; site management guidance and threats to condition should be used in prioritising	We have aligned the options within our dWRMP24 with the RBVP.

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	the benefits to nature. There needs to be an explanation of how the deficit in supply-demand will be met if reductions in demand cannot be met. In regard to the supply options, a number of other options have been proposed in discussions with local water companies which do not seem to be listed in the consultation documentation and/or there are inconsistencies within this information. Water companies and WRSE should ensure that the same options are being considered and taken forward in both plans, and that a confirmed, agreed list of options are provided to Natural England. An example of this; it is Natural England's understanding that the Brighton WTW supply option is a joint scheme between Southern Water and SEW, this option is included within Annex 3 for SEW but not within options listed for Southern Water. If Southern Water will be provided water from this option at Brighton WTW, it should be captured within their water company options and supply calculations if not already. Another example demonstrated in Annex 3, for the period 2025-2030 the transfer from Portsmouth Water to Hampshire is mentioned under Southern Water, Natural England is aware that this option involves the [redacted] water recycling option which is part of this option with Havant Thicket. It is unclear why this has not been selected or mentioned explicitly as an option actively being pursued by Southern Water, the information around this option is not consistent throughout the documentation. This might partly be due to the names used for schemes being in-consistent, please ensure the naming of schemes is consistent throughout the plan and across water companies. Natural England requires more detail on the supply options to be able to adequately respond on this matter. Natural England in most cases have only seen high-level plans and not enough detail at this stage to not rule out likely significant effects to water dependent designated sites, protected landscapes, and priority habitats. There are however many options, that we are aware of from previous WRMP/WRSE consultations, in the consultation document that are medium and high risk in terms of potential impact to the environment (in particular to designated sites) both in the short term (up to 2040) and more so in the long-term (2040+). This is also the case with the drought permit and orders included. Many of the environmental assessment reports for the drought orders/permits require further investigation and assessment (and therefore they are not currently application ready) before they can be supported by Natural England. The comments below provide some examples of where there is environmental concerns in relation to the different type of supply options that are being put forward. Natural England advises caution around relying on transfers/imports from other regions, such as the Severn Thames Transfer which is to be used in the central and high pathway plans from 2040 onwards, especially as other regions have their own environmental constraints. Some examples to demonstrate this concern are: There is a need for SES Water during AMP11-12 to import water from Thames Water for both medium and high-risk situations with a dependence on SESRO and T2AT. There is a risk that neither of these schemes will go ahead and supply targets are not met. Thames Water have increased the need for new supply options from AMP8, even with a focus on demand management, such as transfers (internal at 1.91ml/d or 5-6.7ml/d) and (external at 23ml/d from Essex and Suffolk). Further to this, they have new/more groundwater options, across different locations for AMP 8/9/10 which suggests these options are not sustainable over a long time period. There are risks associated which would question whether the balance can be met between demand and water supply savings, or how customer demand management with catchment management will combat these calculations as it is yet to be proven how much this can save. • Of the Strategic Resource Options (SROs), WRSE has selected SESRO from 2040 in all scenarios, followed by the Severn Thames Transfer and GUC transfer in the more challenging scenarios. Whilst the risk to designated sites and priority habitats and species is lower for SESRO than for some other options, it does have a huge, embedded carbon cost associated with it, and the impact on the setting of the North Wessex Downs Area of Outstanding Natural Beauty (AONB) has not yet been assessed fully.	

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	• Havant Thicket is also selected, supplemented by treated water from [redacted] reuse. This appears to align with Southern Water's Gate 2 submission. There must be the caveat that environmental assessment of these is ongoing and still not determined. For example, in relation to options listed within Hampshire and Isle of Wight, Natural England is continuing to work with Southern Water and Portsmouth Water on the Havant Thicket/Water Resource option to determine if it is a suitable SRO option going forward. The approach to have more desalination options in the future is of particular concern. The number of desalination plants is high and particularly on the Kent coast. Given the ambition to reach net zero, this feels unaligned. For example, the desalination plant proposed within the Swale catchment area in Kent will likely add to the significantly high levels of CO2 emissions already projected within the area due to growth. This will pose an issue for GHG emission targets but also this option has the potential for direct and significant impacts on designated sites and priority habitats and protected species. This is due to the high salinity by-product of the desalination process, the pipework required to transport water and the construction on the plants themselves. Another example of where Natural England has concerns regarding desalination is the site at Reculver in Kent (an option under SEW). This option has already been identified as potentially affecting SSSIs, European designated sites and an MCZ. There is a requirement of further ecological investigation to understand impact of the pipeline routing and identification of specific mitigation measures that will be required during construction of pipelines and operation of the reverse osmosis plant. This site requires an HRA in relation to impacts to European designated sites and a separate and additional assessment undertaken for the Marine Conservation Zone features. Natural England would require further information on improved groundwater abstraction and storage methods; Aquifer Storage and Recovery (ASR) proposed for this region between 2040-2060, and the subsequent environmental assessment/HRA for this type of option. It is understood that this involves injecting additional freshwater from other parts of an aquifer or from the rivers into a confined area within the aquifer to then be stored and pumped back to the surface and treated. It is unclear at this stage what impact this could have on the wider water environment, and we have reservations as to whether this option would have an adverse effect on integrity of European sites or if relevant at a number of designated sites due to storage in chalk being available. In particular, there are potential concerns for the Hampshire option, it is unclear if the sites proposed such as those at River Test WSW are suitable for this option, groundwater storage wise. Many of the reservoirs have potential for environmental implications. For example, Brent Reservoir is a SSSI, Natural England requires clarity on how the interest features of this site will be protected if this is returned to the water supply network. An example of where Natural England has supported work to address potential impacts is South East Water's Canterbury Reservoir option. This option amongst other issues had potential to significant impact and cause the loss of ancient woodland. Natural England have been involved in the detailed design process and developed proposals for extensive mitigation. The outline agreed mitigation packages include a significant amount of woodland and semi-natural habitat creation and offers opportunities for biodiversity enhancement in line with company's statutory obligations and the Governments 25 Year Environment Plan aspirations. Particularly welcome was the company's inclusion of community aspirations such as bridleway improvements, recreation, education and play areas in the overarching outline design. Water recycling options also may come with environmental risk. For example, one of the reuse options proposed for Southern Water in AMP 11-12 at Sandown, an alternative (or sub option) goes to a water supply works near High Alvington. Potential pipeline related construction impacts include five crossings of the Eastern Yar and Medina Rivers. This is in the context and setting of Isle of Wight Area of Outstanding Natural Beauty (AONB) and also adjacent to many water dependent SSSIs such as Alverstone Marshes SSSI and an SPA and Ramsar site. It is unclear what the impacts are as yet, but freshwater flows are important to the interest features of designated sites including the Ramsar site. Natural England requests further information and investigation due to this. In regard to groundwater,	

Respondent	Feedback	Response
	there are small scale groundwater options being utilised such as recommissioning old boreholes or developing new ones. These will also be subject to environmental assessments to ensure they are not having an environmental impact. As the above demonstrates, there are many options that Natural England have reservations regarding environmental impact which will need to be further investigated to ensure environmental compliance before they can be determined deliverable.	
Natural England	**12. Do you support the use of new, potentially long pipelines to move water around the region?** This question is quite ambiguous, it would be useful to know if this means long pipelines within the region internally between water companies in the south east or from outside the region or both. If there are no viable options to address supply issues closer to the source within the region, Natural England understand that supply via other suitable sources of water further away may be viable, however, priority should be given to finding an environmentally sustainable option within region. Natural England acknowledges this is not always possible and long pipelines might be needed in some circumstances, such as bringing more water into North Thames through the Grand Union Canal transfer or within region for example the Littlehampton indirect potable water reuse will involve a very long pipeline. In the North Thames example, it is uncertain as to the justification of how Thames Water will meet the deficit in supply-demand if reductions in demand cannot be met. If there is a deficit that is not accounted for then the volume of transfer should be reviewed as Thames Water already has issues with securing water and are only retaining their drought plan permits or orders until 2040. The use of new pipeline would only be acceptable if it is clearly evident that designated sites and priority habitats have been avoided wherever possible, and/or suitably mitigated/ compensated where appropriate to minimise ecological damage and landscape impacts and enhancement also delivered. Some key factors need to be considered as part of the environment assessment/HRA process such as; are pipelines using existing pipeline networks and only adding additional pipes where necessary, are there entire pipelines requiring new construction/infrastructure, the construction timelines/phases required, locations and pipeline routing, are these underground pipelines (risk of damage/resolving leakage), are they transporting raw water or treated water, would there need to be further pumping stations or treatment works installed/upgraded? Without this information it is difficult to add further comment. Long pipelines will potentially need mitigation to prevent disruption/damage to the environment and have the potential of increasing the risk of more water-related issues such as transfer of INNS and leading to water chemistry changes in the source waterbody. Natural England are continuing to engage in this process through RAPID, and through discussions with water companies for options outside of RAPID, to ensure the most viable and environmentally legally compliant options are taken forward.	All of our options have undergone assessments and the appropriate guidance has been adhered to.
Natural England	**13. We have identified where water companies might investigate a number of new, more innovative nature-based solutions to improve the region's water catchments. Whilst these options can provide multiple benefits the fact they are still relatively new can make it more difficult to be certain of the benefits that will be delivered and the return on investment. Do you agree that we should promote new, more innovative nature-based solutions in our plan to develop a better understanding of their future value and role in delivering water supplies and wider environmental improvements?** Natural England support the encouragement and promotion of innovation, whilst it may be difficult to currently factor into calculations, there are opportunities here to benefit the environment while investigations are ongoing. Nature based solutions can have a large impact within catchments, Natural England would encourage all schemes to incorporate solutions where possible not just those with impacts. Natural England would encourage above and beyond approaches to nature based solutions. It is important to bear in mind, any new innovative options will have to be fully compliant with environmental legislation. Natural England would like to be provided more details on the nature-based solutions and catchment management projects that are being developed. There are significant opportunities to enhance water dependent habitats in this region in particular around restoration of wetlands and re-	We have a range of options including catchment / nature-based solutions

Respondent	Feedback	Response
	connecting these habitats in and outside designated sites, and even between urban and rural areas (e.g., use of SUDS). At this stage Natural England recognise it is important to consider all potential options. Natural England would encourage further discussions are held with regulators to support this, but also to ensure options deemed unviable are not unnecessarily progressed.	
Natural England	**14. Do you support our approach to stop using the majority of Drought Orders and Permits, only continuing to use a limited number during droughts until we achieve 16 one in 500-year drought resilience and stopping their use after 2040 unless we experience a drought more severe than a one in 500-year event**? Yes, Natural England supports this in principle however we would encourage using less of these options before 2040 wherever possible. There are a number of drought permit/orders that are expected to be used until 2040 that Natural England have concerns about, these include the Test drought permit, the North Arundel and Pulborough options for Southern Water and the Chichester groundwater option for PW in Hampshire/Sussex. The Chichester groundwater and North Arundel option are likely to have an in combination impact with one another. Further discussions should be held with regulators about the suitability of these options being used up to 2040. Natural England are currently reviewing many of these drought permits/orders, as mentioned above some are not currently application ready.	We will continue to explore opportunities to reduce reliance on drought permits and orders.
Natural England	**15. Overall do you agree that the emerging plan, which presents the most cost efficient adaptive planning solution, should be used as the basis to further develop our draft best value regional plan?** Natural England supports this emerging plan but with caution, the principles, scenario modelling and approaches seem robust and comprehensive but there needs to be some refining in light of environmental assessments and in respect of Natural England's position more information and work needs to be done that is informed by a current, compliant HRA, SEA and natural capital assessment, the responses above provide examples of this. It is outlined within the consultation document that "a cost-efficient planning process assesses all options which meet both company and WRSE feasibility threshold against whole life delivery costs including the cost of carbon. The resulting plan therefore represents the lowest programme costs to deliver required policy outcomes and core strategic objectives. A cost-efficient plan does not include, in its selection processes, other benefits, additional value and/or wider objectives." It is not clear that this in turn considers the potential costs associated with ensuring that statutory requirements regarding the environment (and enhancement which is also statutory) and how this may impact the solutions put forward and how it is being integrated into the emerging best value plan. We acknowledge that such work will need to rely to some extent on further assessment and analysis over time particularly in the lead up to PR24, but Natural England does expect that the requirements of environmental assessment are met as far as possible based on information reasonably available	We have undertaken assessments on all of our options and ensured we complied with the guidance and regulatory requirements.
CCW **Response to WRSE Emerging Regional Plan**	**Abstraction reduction to protect the environment is likely to be the single biggest driver of investment in water resources over the next 25 years. Do you agree with our approach to establishing the appropriate level of abstraction reduction required across the South East England? Please explain your answer.** The scale of potential investment is clearly significant and therefore agree that there needs to be a more consistent approach to quantifying the environmental benefits delivered in return for investment in alternative supplies. We are pleased that there is ongoing work with the environmental regulators. A framework for prioritising abstraction reductions seems to be a reasonable way of ensuring that the greatest harm currently being caused/biggest benefit delivered determines the course of future strategies.	All of our options undergo environmental assessments. We have set out our prioritisation and justification of our options in our dWRMP24.
CCW	**We have assessed the future water needs of the other sectors that don't rely on the public water supply provided by water companies. Do you agree with our assessment? Please explain your answer.**	We will continue to work with our neighbours within the WRSE and outside on it.

Respondent	Feedback	Response
	As another area where there is a high degree of uncertainty, it will be important to maintain a continuous dialogue with these other water using sectors. WRSE will need to keep forecasts under review as well as wider external factors that could impact on those sectors and their future water needs. We recognise there are particular challenges when working with a fairly disparate sector like agriculture and horticulture. We would encourage all the regional groups to share learnings and successes in this regard so this area of engagement can be further strengthened.	
CCW	**We've described our adaptive planning approach and the scenarios we've included in our adaptive planning pathways. Do you agree that we have planned for the right scenarios in each of the pathways, with a wide enough range for each of our key challenges, through our adaptive planning approach? Please explain your answer.** Given the degree of uncertainty in a number of elements of the plan we agree with an adaptive approach being proposed using different pathways. We believe that the scenarios used, and as far as possible the assumptions that underpin these, should be as consistent as possible. This seems to be particularly important when we consider options that involve other regions.	We will aim to ensure our WRMPs align as far as reasonably possible with that of our neighbouring water companies.
CCW	**Do you support our approach to treat each pathway as equally likely and not choose a core pathway beyond 2040? Please explain your answer.** Given the uncertainties, particularly in the longer term the approach appears to be reasonable. The strength of the adaptive planning approach, and statutory Water Resources Planning Process, is that it allows for plans to be updated at least every five years, so new and emerging data can be taken into account, and plans revised accordingly.	No response required
CCW	**Reducing the demand for water through leakage and water efficiency activity contributes to more than half of the total amount of water needed in the first 15 years of the emerging plan. The balance then shifts to include a greater reliance on supply side solutions, particularly in the more challenging future scenarios. Water companies are committed to delivering these reductions, but they are reliant on customers making sustained reductions in their water use over the long-term. Do you think our plan strikes the right balance between demand and supply solutions and the risks associated with delivery of such solutions? Please explain your answer.** We agree that the proposed reductions in leakage and personal water use are challenging. CCW believes that there needs to be a step change in the way we engage with consumers, and work together as a sector to inform people and raise awareness of the pressures on our water resources. We need to take people with us and convince them they have an important part to play in helping to ensure we can continue to enjoy access to reliable, safe and sustainable drinking water for generations to come. Our research tells us that people are generally not aware of how their water using behaviours can impact on services and the environment and are not sure what "good" behaviours are. We need a collective effort to help people value water and what a healthy water environment brings to society and nature. Leakage levels can act as a barrier to people adopting more water efficient practices so will expect the industry to lead by example by reducing leakage significantly and at a faster pace than previously achieved.	Our dWRMP24 communication strategy ensures that customers are informed on leakage and other water saving strategies.
CCW	**The plan assumes that the Government will introduce new policies that will support more efficient use of water across society - through labelling of water-using products by 2024, introducing a minimum standard for all water using products by 2040 and tightening the water efficiency requirements within the Building Regulations for new homes by 2060. Do you support these interventions and the timing of their introduction? Please explain your answer.** Given the scale of the challenge ahead we would agree that bringing forward some of the timescales would be beneficial.	No response required
CCW	**Do you think it is appropriate for Temporary Use Bans and Non-Essential Use Bans, that reduce demand for water further during droughts, to be used as options in this regional plan?** Companies should always prioritise securing supplies for essential purposes. In a serious drought our expectation is that companies will have been communicating with their customers as the drought	Our dWRMP24 communication strategy ensures that customers are informed on drought measure and developments.

Respondent	Feedback	Response
	developed and therefore at the point that any restrictions become necessary, consumers should understand why they are necessary and how they will be applied etc. While some customers will find these temporary restrictions an inconvenience, our research suggests that they are an accepted tool for managing supplies during droughts.	
CCW	**Do you agree with the mix of options that provide new water supplies for the region within our plan - reservoirs, desalination, water recycling, new transfers, improved abstraction from groundwater storage and ASR schemes? Do you think that some options should feature more or less in our plan to secure future water supplies? Please explain your answer.** It would seem appropriate to explore a mix of options and to use the regional modelling and expertise to determine the right mix. We clearly look to the regulators to ensure that your plans are robust and based on best available information and planning approaches. Your options appraisal process has been shared widely so has been open to challenge.	Our dWRMP24 contains a mixture of supply side and demand options, as well as catchment-based solutions.
CCW	**Do you support the use of new, potentially long pipelines to move water around the region?** Subject to appropriate environmental impact assessment and the agreement of the environmental regulators.	All of our options undergo environmental assessments.
CCW	**We have identified where water companies might investigate a number of new, more innovative nature-based solutions to improve the region's water catchments. Whilst these options can provide multiple benefits, the fact they are still relatively new can make it more difficult to be certain of the benefits that will be delivered and the return on investment. Do you agree that we should promote new, more innovative nature-based solutions in our plan to develop a better understanding of their future value and role in delivering water supplies and wider environmental improvements?** Yes	No response required
CCW	Do you support our approach to stop using the majority of Drought Orders and Permits - only continuing to use a limited number during droughts until we achieve one in 500-year drought resilience, and stopping their use after 2040, unless we experience a drought more severe than a one in 500-year event? **Yes**	No response required
CCW	**Overall, do you agree that the emerging plan, which presents the most cost-efficient adaptive planning solution, should be used as the basis to further develop our draft best value regional plan?** Yes	No response required
CCW	**Finally, do you have any other comments about our emerging regional plan? If so, please give more details below.** Securing water supplies for the future will be a priority for the sector and for most consumers. It is essential that the right investment decisions are made at the next price review that enable substantial progress to be made towards that end. Mindful of the many other areas that companies may also need to invest in, and therefore ask their customers to fund, we think it is essential that the recommendations from our Affordability Review are adopted so that there is adequate support in place for those least able to pay. The remaining customers may then feel more willing and able to support a higher level of ambition and delivery than they would have previously done. Conscious also, of the growing pressures on the cost of living there needs to be a clear link made between water efficiency and affordability, through the potential reduction in metered water bills as well as energy savings both at the household level and at company level, and overall carbon savings.	All of our options are assessed, including for affordability. Our plan provides a narrative on this aspect.
Natural England	**Summary advice** The consultation documentation provides a least cost emerging plan that has identified the challenges and broad scale of water supply deficit that the different sectors and the	No response required – issues covered above

Respondent	Feedback	Response
	environment may face now and in the future. It appears to solve the water supply deficit with a range of solutions and options. However, the information provided is very limited and not always coherently placed in terms of the detail and evidence most relevant to Natural England. Due to this, Natural England cannot conclude whether the options selected in the plan provide the most beneficial environmental outcomes to meet all statutory and policy requirements for environmental protection, improvement, and restoration.	
Horsham District Council **Response to WRSE Emerging Regional Plan**	**Abstraction reduction to protect the environment is likely to be the single biggest driver of investment in water resources over the next 25 years. Do you agree with our approach to establishing the appropriate level of abstraction reduction required across the South East England? Please explain your answer.** Horsham District Council broadly welcomes the approaches which have been identified in the draft strategy. However at this stage the draft strategy lacks significant detail as to how effective the measures of reducing abstraction will be. We are therefore unable to conclusively agree or disagree with the approaches identified. We would however welcome the opportunity for continued engagement as the strategy evolves.	We have provided details on the specific abstraction reductions we are proposing to make to achieve environmental targets and an overview of our proposed further investigations through to 2030.
Chair of CaBA chalk streams restoration group **Response to WRSE Emerging Regional Plan**	Abstraction reduction to protect the environment is likely to be the single biggest driver of investment in water resources over the next 25 years. Do you agree with our approach to establishing the appropriate level of abstraction reduction required across the South East England? The broad parameters of the 'approach' seem very sound. I agree with the plan's articulation of the need to: • determine the appropriate locations and sizes of abstraction reductions (p6); • its recognition of the fact that the impact of abstraction varies between catchments (p8); • and stated need to agree an appropriate pace and prioritisation of abstraction reductions in order to balance the needs of the environment with the cost and with resilience of supply (p9). But there is currently not enough detail to see how this will play out in practice. Nor is there quite yet enough information to determine what constitutes 'appropriate'. Providing this should be a key part of the next phase of the plan. In order to assess 'appropriate' levels of abstraction reduction we need a much more detailed map and description of the scale and distribution of abstraction pressures and / or of the proposed abstraction reductions under the different scenarios. The plan acknowledges that the impact of abstraction varies between catchments, but we need more detail on that variation too. And difficult though this will be, we also need to qualify our rivers, streams and wetlands into some kind of hierarchical order of ecological importance. Some of the questions in the consultation are, of course, designed to start that process, but without the information above, it is difficult to make really informed statements at this stage. And ultimately, without an informed, democratic discussion armed with all this information we risk trading environmental damage in places of great ecological value for the alleviation of environmental damage in places of lower ecological value, or we risk making large investments that may ineffectively mitigate ecological damage or conversely, we risk making no investment or not enough investment where we could very easily have successfully mitigated ecological damage.	We will have ongoing review of options. We will also welcome the opportunity for stakeholders and customers to comment and provide feedback on our dWRMP24.
Chair of CaBA chalk streams restoration group	**Focussing on chalk streams** The plan states (page 4.) that we currently use 6000Ml/d and that over half of this comes from underground sources, the rest from rivers and springs. The ways in which abstraction impacts the environment and the ways in which we can mitigate that impact differ depending on the source of the water and type of environment and especially between whether the source is ground- or surface-water.	We have provided details on the specific abstraction reductions we are proposing to make to achieve environmental targets and an overview of our proposed further investigations through to 2030.

Respondent	Feedback	Response
	Chalk rivers need flow but have suffered acutely from the abstraction of groundwater (see p24 of the CaBA chalk stream restoration strategy), especially following the growth of groundwater abstraction from the chalk in the post-war years. The Water Act of 1945 attempted to control burgeoning, ad hoc expansion of abstraction and included clauses relating to environmental flow protection, based on flow gauging and hands-off flows. But using gauged-flows to manage the impact of groundwater abstraction is ineffective at protecting natural flows in chalk-streams, where the flow cycle is annual and where groundwater abstraction at all times, including at times of year when flows are high, has a significant impact on flows throughout the year and when flows are low. As is pointed out on p25 of the CaBA chalk stream restoration strategy, the wording of the Act did not allow for this distinction and yet environmental flow protection has been based on the same ideas ever since. For example the idea of abstracting more water at high flows and less at low flows simply doesn't protect flows in groundwater dominated streams. Whilst winterbournes need protecting in an entirely different way, as they naturally don't flow some of the time. Excessive abstraction turns ephemeral reaches into grassy ditches but current flow assessments do not protect these valuable parts of the stream. It is very important to take this point on board and duly revise our methods for assessing flows and mitigating the impact of abstraction in chalk-streams, so that when we do make abstraction reductions they actually deliver the improvements we are looking for. Sustainability reductions made in the chalk streams to date have, it is often stated by regulators and the industry, yielded disappointing results. But if so, this is arguably down to this failure to properly consider the way groundwater abstraction reduces flow: by lowering groundwater levels across the whole catchment, and not just by local interception or capture of flow in the radius of the zone of draw-down as is currently espoused by the water companies. Thus, sustainability reductions have often been: • too small a proportion of the overall groundwater abstraction in a given catchment • wholly or partially off-set by increases from other groundwater sources in the same catchment • of too short a time duration (including 12-month shut-downs) to allow groundwater levels to fully recover before assessments are made • have not been made on a catchment, or even regional spatial scale, so that continuing heavy abstraction in other parts of the aquifer minimises the impact of the reduction or at the least makes discerning results very difficult. In addition, when each megalitre of licensed groundwater would have a replacement capital cost of about £2-3 million and the primary statutory duty on water companies is to provide a secure public water-supply, it is not quite in the water company's interests to make these reductions in such a way as to prove their efficacy. A sustainability reduction made in 1993 at Friar's Wash on the River Ver, on the other hand, was: • a significant reduction in absolute terms; • a significant net reduction to the g'water abstraction in the whole catchment; • and there are long sets of empirical data from the pre-abstraction period, during abstraction and following the abstraction reduction. These show that flow recovery over the full year is 12.1Ml/d: most of the abstraction reduction of 14.4Ml/d. In other words, when the scale of the reduction is a considerable proportion of the abstraction and when it is a genuine net reduction across the whole catchment, approximately 80% of the abstraction reductions manifest as increased surface flows.	
Chair of CaBA chalk streams restoration group	In the interests of protecting the environment from the impact of abstraction we need greater transparency of information and we must triangulate decision-making between the industry, regulators and stakeholder interest groups. This hasn't really happened thus far and although this national	We value working collaboratively with a number of third parties and stakeholders.

Respondent	Feedback	Response
	framework planning is consultative, the relative lack of detail that could inform the debate above is currently a shortfall	
Chair of CaBA chalk streams restoration group	**A%R survey** In the interests of opening up the discussion on chalk streams, the CaBA CSRG commissioned an independent survey into groundwater abstraction as a % of aquifer recharge, which is a simple way to form a baseline analysis of abstraction pressure at a level of detail the current draft of the WRSE plan hasn't yet provided. From that A%R survey useful insights can be drawn which illustrate the way this detail will aid a more inclusive decision-making processes to the benefit of all. For example on p17 of the Appendices of the CaBA chalk stream restoration strategy, an analysis of the abstraction reductions needed on the River Colne catchment (as identified by the A10%R target) shows how a prioritisation exercise would indicate deficits of 54.9Ml/d on all of the most ecologically valuable and iconic chalk stream tributaries, set against a total of 274Ml/d for the whole system. This turns a very large deficit, the mitigation of which would be dependent on large infrastructure costs and a long-term delivery timescale, into a much smaller deficit which could be delivered in the short term, with comparatively much less investment in infrastructure. If one also then factored in the potential for the flow recovery indicated by the Friar's Wash data to realign abstraction pressure from groundwater abstraction in the headwaters to surface water abstraction in the lower catchment, across the full year, the 54.9Ml/d abstraction reduction becomes a net loss to public supply of only 11Ml/d. 11Ml/d is a very different number from 274Ml/d. It is true that flow recovery is less in summer (less than 50%) and much less in a severe drought (less than 20%) and these drought conditions may well govern the amount of deployable output upon which we can fully rely. Nevertheless, in terms of environmental protection the flow recovery all year round is just as important, while the flow recovery outside the bounds of the 1:100 year drought, can still be used to fill storage reservoirs and supply the public with water.	We have provided details on the specific abstraction reductions we are proposing to make to achieve environmental targets and an overview of our proposed further investigations through to 2030.
Chair of CaBA chalk streams restoration group	**Short-term, easy and certain solutions should take precedent** A final point in relation to determining the correct approach and appropriate levels of abstraction reductions so as to create significant, tangible improvements to the environment is the need for timely solutions wherever these are at all possible. Many of the strategic schemes will require significant investment in infrastructure, will take a long time to deliver and will be subject to all sorts of public enquiries: note how the 75Ml/d desalination scheme in Hampshire has been ruled out following local protests. Equally uncertain, but in a different way, are the savings we will be able to achieve through changes in public behaviour and water use and through building regulations, labelling of goods etc. These uncertainties mean we must – as a founding principle of out approach – bank obvious, no-regrets gains wherever and whenever we can.	We have provided details on the specific abstraction reductions we are proposing to make to achieve environmental targets and an overview of our proposed further investigations through to 2030.
Chair of CaBA chalk streams restoration group	**The fundamental need for more water** Whichever way you look at it, the south east region is stretched in terms of the supply of water per capita. Any scheme which brings more water into the region will offer significant and certain improvements to the overall resilience of supply. While I agree with the 4 principle underpinning the safeguarding of supplies for the future, namely: - • efficient use of water and minimal wastage; • new water sources that provide sustainable and resilient supply; • a network that can move water around the region; • catchment and nature-based solutions; I feel these are idealistic / optimistic without specifically adding new water sources from outside the region and networks that can bring that water into our region.	Our plan considers supply and demand different drought conditions. The Water Resources Planning Guideline (WRPG) for WRMP24 requires water companies to maintain supplies in a 1:500 drought without resorting to the use of drought permits and orders to increase supply. All of our options undergo environmental assessments. Given the very sensitive nature of particularly vulnerable chalk streams, we have not planned to include drought permits and orders to deliver permanent improvements in resilience.

Respondent	Feedback	Response
	Therefore, I am disappointed that the adoption of 1:500 year planning has greatly reduced the availability of water from other regions. This is effectively allowing other regions to say that although they have more than enough to spare for 499 years in 500, they cannot in fact spare it, in case they need some in that 500th year. In a 1:500 year drought everywhere is stretched: that really shouldn't preclude sharing resources when they are not stretched. This and the apparent limitation on the degree to which flow recovery in the chalk streams can be factored as a reliable deployable output except under the most pessimistic 1:100 or 1:500 scenarios suggests to me that – in the interests of environmental protection – we need to adopt our planning approach so as to partition water-resource solutions that are also environmentally beneficial all of the time from water-resource resilience challenges that are definitively rare, so to ensure that the latter doesn't rule out the former. Of the inter-regional water transfer schemes, the potential to use the Grand Union Canal to transfer up to 400Ml/d of highly treated effluent from Birmingham to the northern part of the WRSE region, from where it could be used to offset a large number of sustainability reductions in the chalk streams, has not been given nearly enough of a billing in this current draft. This is a scheme with a definable and certain boost to supply via infrastructure that was helpfully built by our forbears more than a century ago.	
Chair of CaBA chalk streams restoration group	**Are there any other factors that you think should be considered as we prioritise where abstraction could be reduced in the future?** I feel that there is a very good case for a prioritisation of chalk streams because they are globally rare, iconic ecosystems, are potentially amongst the most biodiverse of British rivers, are home to rare and specially adapted flora and fauna and are under pressure because many of the rivers around London and in the busiest parts of the south east are chalk streams. All the chalk streams of the Colne and Lea, as well as the Darent, Cray, the upper Ivel and Hiz are under acute pressure from groundwater abstraction and have become – in their beleaguered states – emblematic of our careless exploitation of the environment. Turning this narrative around is really important and would be good for all rivers, not just chalk streams.	Our plan aligns with the approach to drought permits and orders set out in the Environment Agency's National Framework Given the very sensitive nature of particularly vulnerable chalk streams, we have not planned to include drought permits and orders to deliver permanent improvements in resilience
Chair of CaBA chalk streams restoration group	**7. Do you have any other comments on our approach to addressing the challenges that are facing South East England?** Just to emphasise the need to bring more water into the south east region as being the most certain and probably cost-effective way of improving the resilience of water resources in this overstretched region.	Our dWRMP24 sets out options for all of our regions, including our SE WRZs
Chair of CaBA chalk streams restoration group	**8. Reducing the demand for water through leakage and water efficiency activity contributes to more than half of the total amount of water needed in the first 15 years of the emerging plan. The balance then shifts to include a greater reliance on supply-side solutions, particularly in the more challenging future scenarios. Water companies are committed to delivering these reductions, but they are reliant on customers making sustained reductions in their water use over the long-term. Do you think our plan strikes the right balance between demand and supply solutions and the risks associated with delivery of such solutions?** Yes, I think it is right to focus hard on these efficiency measures, but there is considerable uncertainty as to the level of savings possible, the level of public appetite for efficiency, our ability to change behaviour. So, as stated, I would like to see these efforts running parallel to schemes that can deliver certain gains, with relatively small investment within a short time-scale, namely Chalk Streams First type abstraction realignment schemes, and the Grand Union Canal and Severn to Thames transfer	Our dWRMP24 offers a range of supply and demand options to meet future supply. Our options are currently under review.
Chair of CaBA chalk streams restoration group	**9. The plan assumes that the Government will introduce new policies that will support more efficient use of water across society - through labelling of water-using products by 2024, introducing a minimum standard for all water using products by 2040 and tightening the water efficiency requirements within the Building Regulations for new homes by 2060. Do you support these interventions and the timing of their introduction?**	Our Target 100 strategy is based on starting to implement a smart metering programme by 2030. We plan to replace all our Visual Meter Read (VMR) and Automated Meter Read (AMR) meters with smart meters by 2030

Respondent	Feedback	Response
	Yes. But the biggest impact would be made by metering and block tariffs. Not invisible meters under the pavement, but meters by the kitchen sink that you can see every day, whirring round and round next to a price meter, just like when you fill your car with petrol	
Chair of CaBA chalk streams restoration group	**10. Do you think it is appropriate for Temporary Use Bans and Non-Essential Use Bans, that reduce demand for water further during droughts, to be used as options in this regional plan?** Yes	No response required
Chair of CaBA chalk streams restoration group	**11. Do you agree with the mix of options that provide new water supplies for the region within our plan - reservoirs, desalination, water recycling, new transfers, improved abstraction from groundwater storage and ASR schemes? Do you think that some options should feature more or less in our plan to secure future water supplies? As stated inter-regional transfers should feature more prominently and we should fight hard against the daft collateral implications of this new 1:500 planning.** I am disappointed to not see Chalk Streams First flow recovery as a specific water-resource option within the plan	The dWRMP24 has taken account of government and regulator objectives for the environment and highlighted our work associated with vulnerable chalk streams. Our long-term destination scenarios propose significant reductions in our chalk groundwater abstractions to support nature recovery, and meet environmental flow or other agreed WFD targets.
Chair of CaBA chalk streams restoration group	**12. Do you support the use of new, potentially long pipelines to move water around the region?** Yes	No response required
Chair of CaBA chalk streams restoration group	**13. We have identified where water companies might investigate a number of new, more innovative nature-based solutions to improve the region's water catchments. Whilst these options can provide multiple benefits, the fact they are still relatively new can make it more difficult to be certain of the benefits that will be delivered and the return on investment. Do you agree that we should promote new, more innovative nature-based solutions in our plan to develop a better understanding of their future value and role in delivering water supplies and wider environmental improvements?** Yes. Especially if Chalk Streams First qualifies as a nature-based solution	No response required
Chair of CaBA chalk streams restoration group	**14. Do you support our approach to stop using the majority of Drought Orders and Permits - only continuing to use a limited number during droughts until we achieve one in 500-year drought resilience, and stopping their use after 2040, unless we experience a drought more severe than a one in 500-year event?** Yes. But personally I would endorse the use of schemes such as the West Berkshire Groundwater Scheme to fill in that 1:100 or 1:500 hole and thus allow the deployable output of flow recovery to be factored into water resources according to the more average pattern of recharge and flow	We are undertaking a review of our options.
Chair of CaBA chalk streams restoration group	**15. Overall, do you agree that the emerging plan, which presents the most cost-efficient adaptive planning solution, should be used as the basis to further develop our draft best value regional plan?** Yes. All the above caveats and comments notwithstanding.	No response required
Chair of CaBA chalk streams restoration group	**16. Finally, do you have any other comments about our emerging regional plan? If so, please give more details below**. Thank you for the opportunity to contribute	No response required
Havant Borough Council **Response to WRSE Emerging Regional Plan**	**WRSE Consultation on Emerging Regional Plan for the South East** I am writing on behalf of Havant Borough Council in my capacity as Leader in response to the 'WRSE Consultation on Emerging Regional Plan for the South East'. Please accept this response as an answer to Question 11 of your consultation. The Council does recognise the important need to reduce the water stressed nature of the South East and welcomes the efforts that have been made by the water companies to address this. However, we have serious concerns relating to the planned use 'recycled water' to top-up the Havant Thicket Reservoir and how it has been communicated so far with residents.	We have provided greater clarity on our decision making process, timeline and prioritisation in the dWRMP24.

Respondent	Feedback	Response
	We are opposed to any such plans being approved without further consultation and exploring all other alternative options.	
Havant Borough Council	**History of Havant Spring** The Borough of Havant is perhaps best known for its acclaimed spring water, which is regarded as one of the best examples of Chalk karst springs in the UK. In fact, this is how the town derives its name, being known in 935AD as 'Hamafunta' the spring of Hama. For much of our history, fresh water has played a vital part in local commerce, from water mills to parchment manufacture to brewing. We are a Borough built on the remarkable natural geography of the Bedhampton Spring. The springs are large, with a combined flow of approximately 104 000 m3/day — enough to fill 40 Olympic-sized swimming pools every day. During the winter, much of this water flows into Langstone Harbour, excess to the drinking needs of the Borough. That's why, I was proud to support plans to once again put Havant Spring Water back on the map, with the approval of Havant Thicket, the first new reservoir to be built in the South East since the 1970s.	We have provided greater clarity on our decision making process, timeline and prioritisation in the dWRMP24.
Havant Borough Council	**Havant Thicket Reservoir** The new reservoir will be a fantastic resource and reduce the water strain on the South East. We welcome and still support this project. However, throughout the process, Councillors were told that this reservoir would eventually, once constructed, be filled from excess water from the Bedhampton Springs. The below extract is from Page 2 of the 121 Page planning application: "The reservoir, when constructed, would be filled with surplus water drawn from the springs at the Bedhampton works during the winter when flows are at their highest - via a new combined inlet/outline pipeline. The reservoir would provide water supplies to Portsmouth Water customers in the summer months as required. Additionally, it would allow Portsmouth Water to transfer water to East Hampshire to supply Southern Water's customers, even in a severe drought." Havant Borough Council has serious concerns about why Southern Water did not make clear its wish to use water recycling during the planning process that concluded last year. This would have I'm sure have had an impact on the public perception on the reservoir project and application.	We have provided greater clarity on our decision making process, timeline and prioritisation in the dWRMP24. Customers will be consulted on our dWRMP24.
Havant Borough Council	**Southern Water** For residents in this Borough, they are already wary of Southern Water due to the reputational impact of the record £90million fine that it received for 6,971 unpermitted sewage discharges. Whilst the company says that it has changed, residents in this Borough, would want to see long-lasting commitment and proven action before agreeing to a radical proposal on how our drinking water is delivered. Not only this, but the process of using recycled water has potentially high environmental impact and we remain unconvinced that this is the best way to tackle the problems highlighted by the WRSE consultation. We note that 21 per cent of the future water supplies are due to come from new or enlarged reservoirs and nine per cent from recycled water. Better demand management and increased capacity at other reservoirs would ensure that there is no need to use recycled water.	We have provided greater clarity on our decision making process, timeline and prioritisation in the dWRMP24.
Havant Borough Council	**Better consultation** Whilst the consultation has been online, we feel that it has not received the type of attention or coverage that would be expected of a major change to how drinking water is stored and produced for residents of the Borough. The consultation should be extended and more use of social media and advertising must be considered. We would also ask that WRSE makes further commitment to a large-scale media campaign explaining what recycled water is, easy to understand public explainers on recycled water and provide a better definition to residents.	We will be consulting on our dWRMP24. We will ensure our customers and stakeholders and fully consulted with
Havant Borough Council	**Conclusion** Havant Borough Council has serious concerns about the proposal that has been set out in the WRSE consultation for recycled water at the Havant Thicket Reservoir. We would ask that further work is	We have provided greater clarity on our decision making process, timeline and prioritisation in the dWRMP24.

Respondent	Feedback	Response
	established to set out in more detail why water recycling is needed for the Havant Thicket Reservoir, as opposed to natural sources for filling the reservoir, as envisioned previously. We remain totally supportive of the Reservoir project upon the proposals set out in the Planning Application for surplus water to be drawn from the Bedhampton Springs. Residents of Havant for 1,100 years have relied upon our natural Spring Water for our prosperity, it has the potential to sustain us for many more years to come, but more work is clearly needed for these proposals to gain the support of both our residents and this Council.	
Horsham DC **Response to WRSE Emerging Regional Plan**	**Are there any other factors that you think should be considered as we prioritise where abstraction could be reduced in the future?** Yes - The Natural England position statement on Water Neutrality in the Sussex North Water Resource Zone has effectively put a moratorium on any development in Horsham District, most of Crawley Borough, and a fair bit of Chichester Borough. This means that 22,000 much needed new homes and 8,000 local jobs have been put on hold until this is resolved. We are the first area to be presented with this problem but there will be more areas facing similar issues in the future. The sooner the water supply issue from the Sussex North Water Resource Zone is addressed the better. For more information please see this link. **https://www.horsham.gov.uk/planning/water-neutrality-in-horsham-district**	We have updated the demand forecast supplied to WRSE to reflect the latest position and set out the dWRMP24 delivery. The dWRMP24 takes into consideration future population projections.
Horsham DC	**We have assessed the future water needs of the other sectors that don't rely on the public water supply provided by water companies. Do you agree with our assessment? Please explain your answer.** Yes - The methodology appears to be sound. We agree with including regional population and property growth in the non-public water supply demand forecast up to 2050. This will however probably need to be reviewed as the resource plan progresses and agricultural and industry practices change over time as it is envisaged they may also become more water efficient.	The dWRMP24 takes into consideration future population projections. We have set out the decision making process of our options in the dWRMP24.
Horsham DC	**We've described our adaptive planning approach and the scenarios we've included in our adaptive planning pathways. Do you agree that we have planned for the right scenarios in each of the pathways with a wide enough range for each of our key challenges through our adaptive planning approach? Please explain your answer** Yes – It is considered that the three scenarios post 2040 cover a wide enough range of variables at this stage in the process. Taking account of the 15-20 year timescale it is the best that can be reasonably predicted	No response required
Horsham DC	**Do you support our approach to treat each pathway as equally likely and not choose a core pathway beyond 2040? Please explain your answer.** It is considered that planning for a 15-20 year timescale is the best that can be reasonably predicted, given that there can be significant changes over a longer period that are hard to predict. (Thirty years ago there was no widespread internet). However, it is considered useful to consider the future horizon and this should continue to be updated throughout the lifetime of the strategy and be updated as part of future reviews.	We have revised our demand forecast to reflect latest household demand data (as per WRMP Annual Review).
Horsham DC	**Do you have any other comments on our approach to addressing the challenges that are facing South East England?** NO – Our other remarks are met elsewhere in our response	No response required
Horsham DC	**Reducing the demand for water through leakage and water efficiency activity contributes to more than half of the total amount of water needed in the first 15 years of the emerging plan. The balance then shifts to include a greater reliance on supply side solutions particularly in the more challenging future scenarios. Water companies are committed to delivering these reductions but they are reliant on customers making sustained reductions in their water use over the long-term.**	We have presented a clear long-term demand management strategy, which sets out the breakdown of leakage management options that form our overall strategy to reducing leakage across the planning period. We have included AMP7 delivery progress on leakage and T100.

Respondent	Feedback	Response
	Do you think our plan strikes the right balance between demand and supply solutions and the risks associated with delivery of such solutions? Please explain your answer. Whilst we do not disagree with the principle of demand reduction it is considered that there is a high level of uncertainty in meeting these targets. Nevertheless, we note that the WRSE target is to reduce demand to achieve 110 litres/person/day but the emerging Horsham Local Plan is looking to set more ambitious targets for new developments of 85lpd for strategic sites and Southern Water's Target 100lpd for smaller sites. These targets are considered realistically achievable. In light of the Water Neutrality issue currently affecting the Western part of the WRSE area more ambitious targets in the WRSE plan would be preferred. Also different companies in the area are at different stages when it comes to leakage reduction so all providers need to be brought up to speed to ensure savings are made as rapidly as possible.	
Horsham DC	**The plan assumes that the Government will introduce new policies that will support more efficient use of water across society - through labelling of water-using products by 2024 introducing a minimum standard for all water using products by 2040 and tightening the water efficiency requirements within the Building Regulations for new homes by 2060. Do you support these interventions and the timing of their introduction? Please explain your answer.** We support the interventions but believe the timescale for their introduction should be accelerated. It is agreed that labelling of water-using products by 2024 is realistic. However the minimum standards for water using products by 2040 is inadequate and should be brought forward, for example to 2030. It is considered that the changes to the water efficiency requirements are required now (for example to assist local authorities affected by water neutrality – the list is expected to grow) to deliver development in the short term – this will potentially restrict economic development and much needed affordable housing in the area. Waiting until 2060 (38 years) is entirely unacceptable.	We have updated our demand strategies to reflect the latest demand position and evidence from our water efficiency programme.
Horsham DC	**Do you think it is appropriate for Temporary Use Bans and Non-Essential Use Bans that reduce demand for water further during droughts to be used as options in this regional plan?** Yes. The forecast accelerating rate of climate change will make these Bans essential rather than optional so it is prudent to include them in the projections	TUBS will be included as a drought measure within the dWRMP24.
Horsham DC	**Do you agree with the mix of options that provide new water supplies for the region within our plan - reservoirs - desalination - water recycling - new transfers - improved abstraction from groundwater storage and ASR schemes?** In principle, a mix of options is preferable to relying on any one “silver bullet” solution which may encounter problems further down the line. The devil as always is in the details and we need to ensure that the interdependency of the options should be monitored so that one solution does not impact the effectiveness of another.	We have an ongoing review of options and we will provide further detail in the dWRMP24. We will present the strategic options consistently and clearly.
Horsham DC	**Do you think that some options should feature more or less in our plan to secure future water supplies? Please explain your answer.** YES - water recycling. Water recycling opportunities should be explored more. As technology evolves this could deliver more water than drought orders and permits. There are case studies from more water stressed areas in Europe that could inform the plan, for example in Valencia, Spain. **https://iwaponline.com/jwrd/article/6/1/72/30249/A-case-study-of-urban-wastewaterreclamation-in**	We will be reviewing our options and we will present the strategic options consistently and clearly.
Horsham DC	**Do you support the use of new potentially long pipelines to move water around the region?** Whilst we consider that this is an issue that should be explored, we are not yet convinced that this will be a mechanism which can effectively deliver solutions, particularly early in the strategy. We are aware that Pipelines of this length may require EIAs or need to be considered through the NSIP process. Furthermore, it is our understanding that at the current time, this would require the water to be chemically compatible across the region in order to transfer from one water company's WTWs to another company's delivery pipeline, and we are unclear as to whether this is currently technologically feasible. Also the transfers would have to be enabled fairly quickly in response to demand. This would require digitisation and monitoring of the regional network to be effective. Different water companies in the region are at	We will present the strategic options consistently and clearly as well are how we arrived at the options, and our optioneering process.

Respondent	Feedback	Response
	different stages of network monitoring so this will need to be evened up. It is therefore considered that localised solutions within WRSE should be investigated first, as whilst other regions may have surplus water at present this is not a given in future should the pace of climate change accelerate.	
Horsham DC	**We have identified where water companies might investigate a number of new innovative nature-based solutions to improve the region's water catchments. Whilst these options can provide multiple benefits the fact they are still relatively new can make it more difficult to be certain of the benefits that will be delivered and the return on investment. Do you agree that we should promote new more innovative nature-based solutions in our plan to develop a better understanding of their future value and role in delivering water supplies and wider environmental improvements?** We support the consideration of nature-based solutions in principle. However, the extent to which NBS can affect the region's water supply and the wider impacts are unknown. The environmental benefits may be more immediately obvious but unless they can deliver an appreciable extra supply they may not be worth pursuing in this context alone. Furthermore, land in the south east is at a premium so the number of sites for NBS may be limited. Caution should be exercised that these NBS do not become a net consumer of water. However, water courses are some of the key corridors in Horsham District's emerging draft Nature Recovery Network and appropriate management of these, which could include NBS, may preserve the water supply to key environmental sites freeing up water from other sources for other uses.	We ensure we consult closely with the Environment Agency and Natural England to ensure the environment is protected. All of our options are assessed for cost and feasibility. We are undertaking an ongoing review into our options.
Horsham DC	**Do you support our approach to stop using the majority of Drought Orders and Permits - only continuing to use a limited number during droughts until we achieve one in 500-year drought resilience and stopping their use after 2040 unless we experience a drought more severe than a one in 500-year event?** In principle, yes - it is preferable to have a continuous proactive plan than an intermitted reactive one. However if in the short term these remain the only viable solution to help manage the situation and prevent wider environmental harm they should not be ruled out	Our Drought Plan and our WRMP will be continually assessed.
Horsham DC	**Overall do you agree that the emerging plan which presents the most cost-efficient adaptive planning solution should be used as the basis to further develop our draft best value regional plan?** The emerging plan is a good starting point. However, considerable detail is required to provide a fully informed response as to the overall effectiveness of the proposals. We wish to work closely with the water companies to help achieve solutions to the identified challenges.	The dWRMP24 sets out Southern Water's approach to adaptive planning.
Horsham DC	**Finally do you have any other comments about our emerging regional plan?** We are concerned that although a number of potential reservoirs have been identified, the locations are not known. Please note that as a local authority we must prepare Local Plans which consider the location and number of future homes. Understanding the location of this together with the level of water resource it can provide to Horsham District (and the wider Sussex North area) in the longer term is critical. In addition, we are aware from existing reservoirs in our District the implications they have in terms of management and it is therefore important that we have early sight of any location in order to factor this in to our business activities as appropriate. We therefore request that we are kept informed on the progress and thinking with regard to River Adur Offline Reservoir as a priority. The Littlehampton water recycling scheme uses existing assets so should be "planning neutral" We do however need to know the ultimate destination of the extra 17 million lpd as it will have a material impact in achieving Water Neutrality in the Sussex North WRZ. It is considered an assessment of the nutrient impact on the Arun SSSIs may be required	We have provided more details of our strategic option in our dWRMP24 including the optioneering process.

Respondent	Feedback	Response
Mid Sussex District Council	**Question 3: Are there any other factors that you think should be considered as we prioritise where abstraction could be reduced in the future?** The Council considers that the abstraction site at Pulborough, West Sussex should be prioritised, firstly, to protect the designated nature conservation sites in the Arun Valley, and secondly, to drive a solution to the current water neutrality issue in order to unlock stalled development.	We have provided greater clarity on our decision making process, timeline and prioritisation in the dWRMP24.
Mid Sussex District Council	**Question 9: The plan assumes that the Government will introduce new policies that will support more efficient use of water across society through labelling of water-using products by 2024, introducing a minimum standard for all water using products by 2040 and tightening the water efficiency requirements within the Building Regulations for new homes by 2060. Do you support these interventions and the timing of their introduction?** South East England including Mid Sussex District is a water stressed area and the Council supports these interventions. However, the Council considers that the timing of these interventions should be brought forward in order to reduce water usage and protect the environment at an earlier stage. The Council intends to set water efficiency standards through planning policy to encourage more sustainable use of water resources and will need to be supported by the water companies with this proposal. The Council strongly feels that the water companies have an important role to play in requiring developers to implement higher standards and to lobby the Government to tighten Building Regulations sooner than 2060. Due to the local water neutrality issue and the availability of water resources in general, including the security of future water supply, these interventions are needed now. The Council also considers there needs to be more public education about the use of water resources and to encourage reduced water usage in existing households.	We have provided greater clarity on our decision making process, timeline and prioritisation in the dWRMP24.
Mid Sussex District Council	**Question 11: Do you agree with the mix of options that provide new water supplies for the region within our plan (reservoirs, desalination, water recycling, new transfers, improved abstraction from groundwater storage and ASR schemes). Do you think that some options should feature more or less in our plan to secure future water supplies?** Mid Sussex District Council notes there is a proposal for a new reservoir at River Adur Offline Reservoir in West Sussex. The Council is considering a significant housing allocation just to the east of this area at Sayers Common. The Council will be seeking further information from Southern Water on this proposed reservoir to determine if there are any implications for the potential housing allocation. For example, the extent of the reservoir and any ancillary works and infrastructure, as well as any health and safety considerations	We have revised our demand forecast to reflect latest household demand data and our options decisions have been made using the latest forecasts.
Mid Sussex District Council	**Question 12: Do you support the use of new, potentially long pipelines to move water around the region?** The Council considers the environmental effects of water transfer need to be carefully considered and has concerns that there may be a longer-term problem if the donor area requires additional water supply in the future perhaps due to future growth or climate change.	We have revised our demand forecast to reflect latest household demand data. Our optioneering process takes into consideration climate change and we work closely with the Environment Agency and Natural England to ensure there are protections on the environment.
Mid Sussex District Council	**WRSE Questions 13: Catchment solutions** The Council supports proposals for nature-based solutions to improve the environment and to increase resilience to the effects of climate change. The Council considers the proposals for environmental improvements and nature-based solutions should integrate to and support the emerging strategies for nature recovery and multi-functional green infrastructure. The Council would welcome discussions with the water companies and relevant partners to discuss this further	We work closely with the Environment Agency and Natural England throughout the process to ensure the environment is protected.

3. Feedback following the June 2022 Submission

Respondent	Feedback	Response
Environment Agency - Feedback following initial checks	**General feedback** Quality of submission Data Information for stakeholders Ambitious Environmental destination work Ambitious PCC and Leakage reductions	**Addressed** The draft plan submission (October 2022) resolves the key issues raised in the Environment Agency feedback following initial checks of the June 2022 draft plan submission.
Environment Agency - Feedback following initial checks	**Major concerns/issues** Least cost plan, not best value plan – based on Jan 22 emerging WRSE plan without changes Option details limited – (scopes?!). Demand options bundled. Data tables contain multiple unresolved deficits, are incomplete and contain errors Q: [redacted] and Havant Thicket? HRA not yet completed (interim report does not determine compliance) Test Drought permit/order appears to be selected up to 2042	Plan is based on WRSE Best Value Plan Fact files produced for options (Annex 13) New section on demand options – sets out details of activities and data sources, selection process and risk assessment
Environment Agency - Feedback following initial checks	**Additional issues** Timelines for re-consultation and ability to account for WRSE consultation responses Feedback on emerging WRSE plan not incorporated High risks around scheme deliverability and further assessment required. Not clear how selection has been justified/tested. Inclusion mutually exclusive options (Horsham/Littlehampton) Reference to WRSE methods – own methods/outputs often not detailed. Unclear on Environment Agency feedback on WRSE methods. 1 in 100 year resilience for Central Area until 2030. Adaptive planning not clearly presented.	We were unable to take account of responses to the Emerging Regional Plan in our June submission due to time constraints but have considered comments for this dWRMP24 as outlined in this Annex.
Environment Agency - Feedback following initial checks	**Corrections** Links within narrative broken throughout Environmental destination – reference to Environment Agency's prioritisation methodology. This is misrepresentative – the prioritisation work was agreed by the Environmental Advisory Group including stakeholders. The Environment Agency took principles agreed by the EAG to propose a semi-quantitative assessment of prioritisation. This was agreed and endorsed by the EAG. Havant Thicket and Budd's Farm – appear to be double counted in the narrative. Not clear in data.	The entire document has now been re-designed. We have updated the wording around catchment prioritisation to state that the approach we have followed was that agreed and endorsed by the EAG We have updated our text around the SRO options.