



Water Resources Management Plan 2024

Statement of Response

Annex 5.2: Responses to non- questionnaire respondents by organisations

August 2023
Version 1

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Glossary

Abbreviation	Text
AONB	Area of Outstanding Natural Beauty
BAU+	Business As Usual Plus
BNG	Biodiversity Net Gain
CSMG	Common Standards Monitoring Guidance
CSO	Combined Sewer Overflow
dWRMP24	Draft Water Resources Management Plan 2024
DCMS	Department for Culture, Media and Sport
DO	Deployable Output
DPC	Direct Procurement by Customers
DWMP	Drainage and Wastewater Management Plan
DYAA	Dry Year Annual Average
DYCP	Dry Year Critical Period
EA	Environment Agency
EAR	Environmental Assessment Report
EDO	Emergency Drought Order
EFI	Environment Flow Indicator
EIA	Environmental Impact Assessment
EIP	Environment Improvement Plan
EIR	Environmental Information Report
FAT	Full Advanced Treatment
FCT	Favourable Conditions Table
FHH	Future Homes Hub
GCM	General Circulation Model
GWDTE	Groundwater Dependent Terrestrial Ecosystems
HBF	House Builders Federation
HoF	Hands Off Flow
HRA	Habitats Regulations Assessment
HTR	Havant Thicket Reservoir
HWTWRP	Hampshire Water Transfer and Water Recycling Project

Abbreviation	Text
INNS	Invasive Non-Native Species
IROPI	Imperative Reasons of Overriding Public Interest
LNR	Local Nature Reserves
LPA	Local Planning Authority
LPDF	Land Promoters and Developers Federation
LSE	Likely Significant Effect
LSO	Long Sea Outfall
MAR	Managed Aquifer Recharge
MCZ	Marine Conservation Zone
MDO	Minimum Deployable Output
MMO	Marine Management Organisation
MRF	Minimum Required Flow
NAV	New Appointment and Variations
NCA	Natural Capital Assessment
NERC	Natural Environment Research Council
NFU	National Farmers Union
NGO	Non-Government Organisation
NIC	National Infrastructure Commission
NPPF	National Planning Policy Framework
NSIP	Nationally Significant Infrastructure Project
ONS	Office of National Statistics
PDO	Peak Deployable Output
PPC	Pulborough Parish Council
PWS	Public Water Supply
RAPID	Regulators Alliance for Progressing Infrastructure Development
RBMP	River Basin Management Plan
RCM	Regional Climate Model
RSPC	Rowland Castle Parish Council
SAC	Special Area of Conservation
SACOs	Supplementary Advice to the Conservation Objectives
SEA	Strategic Environment Assessment

Abbreviation	Text
SEMD	Security and Emergency Measures Direction
SESRO	South East Strategic Reservoir Option
SINCs	Sites of Importance for Nature Conservation
SMC	Scheduled Monument Consent
SNZ	Sussex North Water Resource Zone
SoR	Statement of Response
SPA	Special Protection Area
SSSI	Site of Specific Scientific Interest
STT	Severn to Thames Transfer
SuDS	Sustainable Drainage System
T2ST	Thames to Southern Transfer
UKCP18	United Kingdom Climate Projections 2018
WAFU	Water Available For Use
WFD	Water Framework Directive
WHOP	World Health Organisation
WINEP	Water Industry National Environment Programme
WRMP	Water Resources Management Plan
WRPG	Water Resources Planning Guideline
WRZ	Water Resource Zone
WSW	Water Supply Works
WTW	Wastewater Treatment Works

1. Feedback by the Environment Agency (EA) and our responses

Reference	EA comment	EA position	EA recommendation	Southern Water response
R1.1 Delivery of options to remove Natural England's Water Neutrality constraints	<p>Because of issues around delivery of supply options and the risk to resilience of Sussex North WRZ, the water company details how it currently requires Water Neutrality for new developments to minimise pressure of protected areas in the zone, a requirement set by Natural England.</p> <p>The company also sets out current pressures from the treatment works outage at Weir Wood and indicates that the site will provide deployable output benefits again from 2024/25. However, additional information around this and any further increase in DO expected over AMP8 would be beneficial.</p>	<p>Water Neutrality is required by Natural England to ensure compliance with Habitats Regulations. This means demand in the zone must not increase until there is a long term sustainable source of supply to increase water availability and the level of resilience in Sussex North WRZ.</p> <p>Until completion of the Pulborough groundwater sustainability investigation and implementation of the agreed resulting actions to protect the environment, Natural England's policy of 'water neutrality' in Sussex North WRZ will remain, which is compromising development of new</p>	<p>We would expect Southern Water to:</p> <ul style="list-style-type: none"> Provide clear confirmation on which options have been and are being delivered to reduce abstraction pressure on Pulborough and the need for water neutrality. This should include further detail on the current DO benefits expected from Weir Wood over the next 5 years as work concludes. Provide an update on the operational regime solution being explored in response to water neutrality, setting out a timeframe for implementing this and any implications this may have for the WRMP. 	<p>We have updated the programme of delivery of supply-demand schemes in Sussex North WRZ which includes schemes that were in WRMP19, the return to service of Weir Wood WSW and additional mitigation options. Weir Wood WSW is scheduled to provide the follow PDO benefit over the next five years:</p> <p>2023-24: 0MI/d 2024-25: TBC 2025-26: 13MI/d 2026-27: 13MI/d 2027-28: 13MI/d</p> <p>We will also continue to deliver our water efficiency and leakage reduction programmes and the Littlehampton WTW recycling scheme.</p> <p>Due to the holistic nature of the supply-demand balance and the associated Central area strategy, our revised dWRMP24 reflects all drivers of supply-demand deficits, including water neutrality.</p> <p>The operational regime option assumes greater utilisation of the Portsmouth Water bulk supply and other Southern Water sources to allow the Pulborough groundwater source to be rested. This has been considered further and discussed with the EA and cannot be relied upon as a long term response to water neutrality because it implies greater use of existing sources and creates a risk to the WFD objective of No Deterioration in waterbody status of the existing sources. This solution is no longer considered to be viable.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
	<p>Southern Water also indicates that it is looking to formalise an operational regime around the use of Pulborough abstraction which, if agreed, could mean water neutrality is no longer required. However, there is limited detail around this in the plan and timescales of when this will be determined have not been provided.</p> <p>We note that delivery of Littlehampton water recycling is key to Sussex North and providing significant additional supply. This is detailed in issue 1.4 below.</p> <p>The company also provides its Contingency Plan in Annex 22. Although there are many options indicated in here the level of detail is limited and further assessment is clearly required to understand which of these could be quickly progressed and how they could</p>	<p>housing in the South East.</p> <p>We would expect Southern Water to provide updates to its customers and wider stakeholders on Water Neutrality scheme in its final plan.</p>	<ul style="list-style-type: none"> Undertake further assessment on the options set out in the company's Contingency Plan for the Central area, assessing whether any of these options could be take forward alongside current selected options to help move away from water neutrality constraints and provide secure supplies to customers. Continue to deliver its supply options to address the risk to security of supply, provide regular updates on its water neutrality scheme and engage with its customers effectively 	<p>We have agreed in principle with SES Water to extend the current arrangement we have with them in Sussex North WRZ to 2031 and increase DO benefit from the current 1.3MI/d to 4MI/d. This has now been incorporated in our revised dWRMP24.</p> <p>We are also continuing to review other options within the Central area (and other parts of our region) in our Contingency Plan and in the separate Mitigation Plan included in our revised dWRMP24. Examples of options we are looking at include temporary desalination plants and temporary pumps to increase network flexibility at peak demand.</p> <p>We remain focussed on the delivery of our supply and demand schemes in Sussex North WRZ to close the supply-demand balance gap in order to achieve our target levels of service and remove the constraint imposed by Natural England's water neutrality position statement. We will continue to engage with our customers so they are aware of the levels of service situation and are encouraged to support our water efficiency activities.</p> <p>We have recruited a full-time Water Neutrality Lead role in the company to engage with relevant stakeholders both internally and externally and develop a coordinated approach to deliver water neutrality in Sussex North WRZ. We will provide updates to the EA and Natural England during regular liaison meetings.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
	contribute to alleviating water neutrality requirements.			
R1.2 Portsmouth Water bulk supply to Sussex North	Southern Water has selected the bulk supply transfer from Portsmouth Water to Pulborough (Sussex North WRZ) of up to 15MI/d by 2026 in its planning scenario between 2025-35 plan. The EA is aware that Portsmouth Water under its best endeavour is able to deliver only 5MI/d to Southern Water in a drought. We recognise the risk to security of supply during a drought for Southern Water, if this bulk supply is not delivered to Pulborough and would expect a Contingency Plan to be considered.	The risk to security of supply in a drought in a lack of sufficient bulk supply transfer from Portsmouth Water to Pulborough.	<p>We would expect Southern Water to:</p> <ul style="list-style-type: none"> communicate clearly with Portsmouth Water around the potential risk of this bulk supply transfer, timeline for delivery and any agreement between the two water companies. to consider a Contingency Plan and a potential alternative option to address the risk. 	<p>We have discussed this with Portsmouth Water and agreed that the bulk supply to Pulborough will remain at 15MI/d for WRMP24 and have agreed with Portsmouth Water that we should both assume a volume of 15MI/d. Whilst there are risks that the water may not be fully available in extreme droughts, it is the intention of the bulk supply agreement to provide this volume in droughts up to 1-in-200 year drought severity.</p> <p>Our Drought Plan contains a toolbox of interventions which could be implemented if the situation arose whereby the full 15MI/d bulk supply was not available. In addition, we have developed a Contingency Plan to accompany the revised dWRMP24 which includes some actions which could be implemented quickly if the need arose.</p> <p>The other key mitigation is early and continuous dialogue with Portsmouth Water so we have advanced warning if the full 15MI/d volume cannot be delivered so that we can start taking mitigation actions.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
R1.3 Sussex Coast Desalination option	<p>The water company has not outlined any detail around its 'Sussex Coast Desalination' option. We know this used to be proposed at Shoreham which we understand is no longer possible. The company has not proposed a suitable alternative option and as such this poses a risk to security of supply with potential of an unresolved deficit in 2028 and also later in the planning process.</p> <p>The SEA has not been updated to reflect alternative options to Shoreham therefore, we are unable to assess the potential risks as the information provided is out of date. This must be addressed in the revised dWRMP24.</p> <p>In PR19, the old Shoreham option was supposed to provide 10MI/d by 2028. In the Draft Plan, it is indicated that Sussex Coast desalination</p>	<p>Lack of suitable option to meet the supply demand balance deficit will pose a risk to security of supply to Southern Water and its customers.</p> <p>Lack clarity and confirmation of the alternative option (title, type, location, DO benefit) in water company's Draft Plan affected our reviews and confidence in the option.</p> <p>Appropriate SEA assessment on any future potential alternative option is needed. This is to ensure it will not pose any significant risk to the environment.</p> <p>If alternative options are to be considered, these should be clearly set out. The company should consider whether new options would constitute a material change and whether the company need to</p>	<p>EA expects Southern Water to:</p> <ul style="list-style-type: none"> identify, confirm and propose an appropriate alternative supply option to replace its undeliverable option in the South Coast the alternative options would need to meet the supply demand deficit and be operationally available by 2028 clarity around DO benefit from any alternative proposed option is expected Water company should also justify how it will deliver additional bulk supply transfers in the future. 	<p>The Sussex Coast desalination option has now been removed from our plan. This was because the land on which the scheme was intended to be built is no longer available and we have not been able to identify an alternative site.</p> <p>We have re-looked at our unconstrained options list to identify an alternative to the desalination option on the Sussex Coast and have identified our Lewes Road groundwater option as a potential alternative. The option seeks to rebuild our Lewes Road groundwater source and remove network constraints to achieve its consented DO of 7MI/d. The option was rejected as part of WRMP19 options appraisal work due to excessive costs. We are now working on an alternative design that will reduce the cost. We have currently set the DO of the option at 3.5MI/d under all planning scenarios in line with our WRMP19 estimate. It produced up to 5.5MI/d during the 1989-90 drought. Test pumping is planned for later this year to confirm the DO.</p> <p>We have agreed with SES Water to extend a current bulk import into the Central area up to 2031. The bulk supply can provide up to 4MI/d following network improvements.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
	<p>option capacity can increase to more than 30MI/d by 2035. We note that this is significantly higher volume of water from this source. However, we would need clear explanation around what additional infrastructure is required to achieve this.</p> <p>Also, any materially changing factor needs full assessment and detailed proposals for EA to consider and review.</p>	reconsult on the revised dWRMP24.		
	The lack of suitable location for this option is a significant risk to its delivery and it is unlikely to be implemented by 2028, which is resulting in risk to the security of supply.		A full SEA assessment would be expected to be completed on the alternative option. If there were identified potential risks to the environment, we will expect a full mitigation and Monitoring Plan to be provided.	We will carry out environmental assessments of any alternatives and, if needed, provide details of any mitigation measures that may be needed.
	We also found it misleading that on page 40 of the technical report it is stated that this		The company should update its plan to ensure it does not include an infeasible option.	As described above, the Sussex Coast desalination option has been removed from our revised dWRMP24. The extension of the SES Water bulk transfer and the Lewes Road groundwater options are now included as feasible options.

Reference	EA comment	EA position	EA recommendation	Southern Water response
	<p>scheme at Shoreham is 'progressing'. Effectively the original project is undeliverable, and it needs to be clearly stated in the plan and clarify that a complete new/ different scheme will be proposed.</p>		<p>The company should ensure it works with WRSE to provide the regional group with the most up to date information on any alternative options.</p> <p>A clear statement regarding undeliverability of Shoreham desalination and details around a new alternative option needs to be included to avoid confusion for your customers.</p>	<p>We have included the Lewes Road groundwater option in the list of constrained options provided to WRSE for the revised dWRMP24.</p> <p>As described above, the Sussex Coast desalination option has been removed from our revised dWRMP24. This is clearly stated in our SoR and will also be clarified in our revised dWRMP24 along with a description of the alternative solutions we considered in its place.</p>
<p>R1.4 Littlehampton WTW recycling scheme (2027-28) Deliverability and timescale</p>	<p>Given the work undertaken so far and uncertainty given the option design, there is a risk that this scheme will not be delivered by 2027-28.</p> <p>There are numbers of assessments that still need to be undertaken. This option requires further environmental assessment to be considered as a feasible option.</p> <p>We would expect Southern Water to ensure this option will not pose any risk to the environment. We have a number of</p>	<p>This option contains different environmental, ecological and water quality risks which is concerning and needs to be fully assessed to ensure there is no risk to the environment. Possible implication for the designated sites, impacts on WFD compliance in the river need to be identified and determination for potential mitigations is required.</p> <p>The Littlehampton WTW recycling option is also critical as it will have an</p>	<p>We are aware of additional proposals/details for this option which have been shared locally through liaison meetings with Southern Water. This detail has not been included in the dWRMP.</p> <p>The company should include further scheme details in its final WRMP and set out contingency/mitigation for this option if the scheme is not delivered by 2027-28. There is much work to be done on this option, including deciding upon where the recycled water will be discharged. The EA would expect a detailed programme of</p>	<p>We have undertaken a review of the amount of work that remains to be done. Environmental studies, surveys and investigations are currently being planned and procured but it is unlikely that the project can be delivered before 2030. This means the DO benefit from this project will first be delivered in 2030-31. We have accordingly amended the delivery date for this option in the revised dWRMP24.</p> <p>The Littlehampton WTW does not discharge to the Arun estuary. It discharges via a long sea outfall from Littlehampton.</p> <p>We have considered two variants of this option; one option involves discharge of treated effluent into the river while the other option considers transferring the water to Church Farm Reservoir. However, Church Farm Reservoir is also the potential storage site for another feasible recycling project. As it is not large enough to accommodate flows from both sites, the revised dWRMP24 assumes progressing the variant of the Littlehampton WTW recycling option with direct river discharge. However, the other variant is still included in the revised dWRMP24 as a feasible option if further work reveals that to be a better option. The two variants of the Littlehampton WTW recycling option are, however, mutually</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
	<p>concerns including when the water will be entering the Rother, whether this will be continuously or during low flows. We are unclear where the water will be discharged (i.e. direct to the Rother/via either Church Farm Reservoir or MAR).</p> <p>We also have further concerns regarding migratory fish species, temperature rises, water quality issues and any potential impacts to the River, also the interaction between the tidal Arun and Wildbrooks, as it is a designated site.</p> <p>There may also be water quality implications with the reduction of flow into the estuary from Littlehampton wastewater treatment works.</p> <p>Consideration needs to be given to permissions to discharge to the sewer of any hazardous substances or</p>	<p>impact on the length of time water neutrality for new developments is required in the Sussex North area. Any delay in delivery of the recycling option will have an impact on development. It is essential that the water resources needed to allow the water neutrality requirement to be lifted, are available as soon as possible. Southern Water should provide a timeline and confidence in delivery of the solution as soon as possible.</p>	<p>work outlining the milestones in order to meet the 2027-28 deadline.</p> <p>Southern Water need to clearly explain any implication from Littlehampton WTW recycling scheme's timeline delivery on the requirement for water neutrality for new development and the work in progress in its final plan.</p>	<p>exclusive. To give the EA visibility of our work programme and milestones we submitted a roadmap in Jan/Feb 2023. To keep the EA updated we have instigated weekly WRMP/drought plan calls during summer 2023 and intend to continue these until we finalise our WRMP24.</p> <p>The water neutrality position statement will apply until the Pulborough groundwater licence is amended following the Pulborough groundwater sustainability investigation (concluding 2025) or until there is sufficient supply-demand headroom to allow the Pulborough groundwater source licence to be reduced if it is found to be having an adverse effect. We have covered the EA request for clarity on timelines above.</p> <p>The delay in delivery of the Littlehampton WTW recycling scheme means that we must continue to operate the groundwater abstraction at existing rates for longer and/or will require greater use of the Pulborough Surface Water Drought Order.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
	<p>persistent substances that are difficult to treat and remove prior to discharge.</p> <p>We would expect further investigation to assess impacts on WFD compliance in the river and to determine if mitigation is required. The location and design of the outfall would need to be considered to reduce scour and protect sensitive species/habitats (more technical details can be provided, separately).</p>			<p>We will need to further consider the potential timing of any licence reductions arising from the Pulborough sustainability study as it is likely that, owing to the delay in delivery of Littlehampton WTW recycling option, we will not be able to accommodate loss of groundwater licence without incurring a supply-demand deficit. We will discuss this further with the EA in the development of our Environmental Ambition for our revised dWRMP24.</p> <p>Our Pulborough drought options relate only to the surface water abstraction and assume the groundwater will be unavailable and the MRF condition would not be modified to allow any additional groundwater abstraction.</p>
R1.5 River Adur Offline Reservoir (up to 19.50MI/d by 2045)	<p>This option is selected further in the future by 2045, however there are some environmental concerns which need to be considered. Further assessment and modelling is needed to confirm the water availability.</p>	<p>There may be potentially significant impacts on the environment as well as water quality and impact on WFD, which needs to be addressed before we ensure this option can be feasible.</p>	<p>Significant further assessment is required to understand the viability of this option.</p> <p>The site is located in a small rural area and because considerable developments will be needed, the water company needs early engagements with the local stakeholders.</p>	<p>We recognise that considerable work needs to be done to assess the feasibility of this option. We have consequently pushed back the earliest delivery date of this option to 2039-40 to allow us sufficient time to investigate and develop this option.</p> <p>We will carry out further investigations during AMP8 (2025-30) into the feasibility of this option and identify the most viable location assuming it is feasible from an engineering, water quality and environmental impact perspective. As part of the process, we will also engage with landowners, the local community and stakeholders including the local planning authority.</p>
R2.1 Pulborough groundwater licence reductions	<p>The Pulborough groundwater licence may need to change following the conclusion of an</p>	<p>Lack of clarity around how the plan can adapt to the conclusion of the licence review given</p>	<p>As detailed fully in issue 6.1, the company should provide clear information setting out the possible</p>	<p>There is uncertainty regarding the outcome of the ongoing investigations on the environmental impact of Pulborough groundwater licence. To address this uncertainty, we have considered a range of sustainability reductions.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
	<p>investigation into the sustainability of the Pulborough groundwater licence (concludes 2025). The EA's understanding from discussions locally that the company is committed to implement any required action as soon as possible after this date and will also consider the potential for loss of the groundwater licence.</p> <p>In Southern Water's dWRMP24, the company has included a 'worst case' scenario where they consider the groundwater licence may be lost beyond 2040, however it has not clearly shown that it has considered the range of possible outcomes that could result from the sustainability investigation, when these might happen or what actions would need to be taken to enable these to be implemented. Therefore, it is not currently clear to stakeholders what the</p>	<p>this could require the company to reduce or cease abstraction before 2040.</p> <p>Lack of appropriate options to manage potential outcomes of the licence review.</p>	<p>scenarios of the licence review.</p> <p>The company should explore what additional options may be available to cater for possible outcomes of the Pulborough groundwater licence review. This should include further feasibility assessment of its Contingency Plan options set out in Annex 22 of its Draft Plan.</p>	<p>We will consider additional environmental destination sensitivity scenarios to explore the potential risk of earlier licence changes. However, the delay to our Littlehampton WTW recycling scheme is likely to impact the extent to which we can accommodate earlier licence reductions (before 2030) in Sussex North WRZ. Annex 9 of the revised dWRMP24 describes our proposed measures to protect and enhance the environment.</p> <p>We are testing different potential outcomes from the Pulborough groundwater licence sustainability investigation through some additional sensitivity testing of our Environmental Destination which would include the risk of earlier reductions or revocation of the Pulborough groundwater abstraction licence.</p> <p>These sensitivity tests will determine the additional interventions we might need to deliver to ensure a supply-demand balance in Sussex North WRZ and will be reported in our revised dWRMP.</p> <p>We will maintain and be prepared to deliver any interventions in our Contingency Plan for the Central area, as required, to mitigate any short term supply-demand impacts which cannot be met through the delivery of permanent schemes.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
	company's intentions are for the Pulborough groundwater licence or the resulting options that may be required to be brought forward to enable the company to take action before 2040, if it is needed.			
R2.2 Reliance on drought permits and orders in Central area (Sussex North WRZ)	<p>The plan is not clear in explaining under which scenarios (1-in-100 or 1-in-200 year) drought permits and orders will be used to address deficit before 2025. We recommend the company provide clear explanation and dates (years) for which these will be utilised.</p> <p>The dWRMP24 states that Southern Water is relying on the use of its Pulborough Drought Permit/Order to provide up to 23MI/d until 2041 (in a 1-in-200 year event). However, it is not clear if the water company is including any scenario that allows utilisation of the Pulborough Drought Permit/Order under 1-in-100 year event. We would expect more clarity on</p>	<p>Reliance on Pulborough groundwater licence during any drought event under 1-in-100 and also under 1-in-200 year event, will potentially have significant environmental impacts.</p> <p>We have serious concerns over this reliance as we have not been convinced that use of this permit would be appropriately mitigated.</p> <p>Until completion of Pulborough sustainability reduction investigation and implementation of the agreed resulting actions to protect the environment, Natural</p>	<p>The company must:</p> <ul style="list-style-type: none"> provide justification of why it is continuing to rely on drought permits and orders in 1-in-100 events until 2041 given the environmentally sensitive area and risks associated with permit, Southern Water should reconsider its plans and clearly seek to reduce and end its reliance on Pulborough drought permit/order as quickly as possible 	<p>We recognise and agree with the need to reduce and ultimately stop reliance on drought permits and orders in environmentally sensitive areas. However, while we build a more resilient supply system, we will be dependent on drought permits and orders in the interim in the event of a drought.</p> <p>Annex 26 of the revised dWRMP24 provides additional consideration and narrative on the use of drought permits and orders across our supply area and the degree to which we might be able to reduce our reliance on them.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
	<p>this and confirmation that this source is not planned to be used under 1-in-100 year event.</p> <p>We are concerned over the reliance on this source given the Pulborough Drought Order EAR has highlighted a number of possible environmental impacts including those on the Arun Valley SAC which need to be understood and mitigated further.</p> <p>The company should justify this decision and demonstrate that alternatives have been explored fully (including some contingency options explored in Annex 22).</p>	<p>England's policy of 'water neutrality' in Sussex North WRZ will remain, which is compromising development of new housing in the South East.</p>	<p>Southern Water needs to provide clear justifications on using Pulborough Drought Permit from the start of the planning period, as it is currently not application ready, and the company do not have appropriate mitigation identified.</p> <p>We would expect that Southern Water fully explore all other alternative options to avoid reliance on Pulborough groundwater source. If to the company determines that it must still rely on this source in the short term, we would expect to this option to be fully assessed and application ready.</p> <p>The company should justify the use of this option and explains why the contingency options (proposed in Annex 22) cannot be brought forward to reduce reliance on</p>	<p>We expect our Pulborough Drought Permit/Order to be application ready in 2023. Details are provided in Annex 26_of the revised dWRMP24.</p> <p>The Pulborough groundwater source has been removed from the drought permit and order options and these will only relate to Pulborough surface water.</p> <p>This is addressed in annex 26 of the revised dWRMP24.</p> <p>We have already reduced our reliance on the Pulborough groundwater source during normal conditions. It should also be noted that the source remains licenced and adverse effects from the groundwater abstraction are yet to be established and quantified by the ongoing investigations.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
			Pulborough groundwater source.	
		Potential risk to security of supply due to lower resilience under extreme drought event	We understand that Sussex North WRZ has less resilience (1-in-100 until 2030). We would expect Southern Water to take immediate actions to increase the resilience of this WRZ under the Emergency Drought Order (EDO) to 1-in-200 years (during 2025- 2030) and be resilient to 1-in-500 years by 2039-40. Southern Water should provide more evidence and justification for not delivering an expected resilience level in SNZ, and to demonstrate that it is increasing resilience as quickly as possible.	<p>The level of resilience to EDOs is currently less than planned due to the supply-demand deficit in Sussex North WRZ that is largely driven by the potential impact of the Pulborough groundwater licence on the Arun Valley designated sites.</p> <p>We are aiming to increase the level of resilience as quickly as possible to reduce the risk upon customers and the environment and remove the constraints on new developments imposed by Natural England's water neutrality position statement. We are increasing the number of customers re-zoned to SES Water in Sussex North WRZ and will test whether we can increase the level of resilience in Sussex North WRZ from 2025-2030.</p>
R2.3 Increase level of resilience to emergency drought orders (EDOs) in the Central area to 1-in-200 years as soon as	Southern Water's resilience during 2025-30 in Central area (Sussex North WRZ) under EDO is 1-in-100 year, which is below the expected resilience of 1-in-200 year. There is an expectation to		We expect that the water company explains in more detail around its level of service and provides clear reason and justification for the reduced level of service and any timeline for when the resilience will improve to its customers.	We have updated our revised dWRMP24 to more clearly explain our target and current levels of service for customers and the environment and when we expect these to change.

Reference	EA comment	EA position	EA recommendation	Southern Water response
possible and 1-in-500 years by 2040 at the latest	<p>increase resilience under EDO in Central area to 1-in-500 year by 2040.</p> <p>On Page 53 of the technical report, Southern Water has explained that your current levels of service for emergency drought orders and permits and the glidepath for achieving 1-in-500 year resilience.</p> <p>The company has also explained that it expect short-term level of service for Sussex North WRZ drought permits and orders (up to 2027) could be less than your target.</p>	Potential risk to the River Test as an environmentally sensitive area	Southern Water needs to take action to explore other options to accelerate its plan to reduce reliance on Test drought option.	<p>Our use of drought permits and orders is discussed in annex 26 of the revised dWRMP24.</p> <p>The change to delivery of the Hampshire Water Transfer and Water Recycling Project (HWTWRP) has necessitated an extension in the use of drought orders and permits as we are unable to achieve supply-demand balance without them.</p> <p>We have included a Mitigation Plan in our revised dWRMP24 which describes the additional operational actions we can take to reduce the likelihood/ duration of needing to rely on drought permits and orders. See annex 27 of revised dWRMP24.</p>
R3.1 Test drought permit utilisation until 2040/41	The water company is reliant on Test drought permit until 2040/41, which concerns us given the environmental sensitivity of the River Test and interaction with the River Itchen SAC. There is also a lack clarity under		The EA would expect to see a greater level of evidence and justification as to why Southern Water is reliant on this drought option until 2040-41.	<p>Please see Annex 26 of the revised dWRMP24 where this is discussed in detail.</p> <p>The change to delivery of the HWTWRP has necessitated an extension in the use of drought orders and permits as we are unable to achieve supply-demand balance without them.</p> <p>We have included a Mitigation Plan in our revised dWRMP24 which describes the additional actions we can take to reduce reliance on drought permits and orders. See annex 27 of revised dWRMP24.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
	<p>which scenarios the Test drought permit will be used in the plan. This is while the company has not demonstrated that it has exhausted options to stop utilising River Test source option sooner than 2041. Considering that River Test is in sensitive area and Southern Water has stated that is committed to protection of chalk streams as part of its corporate strategy, we would expect higher level of consideration for not relying on this source during a drought.</p>	<p>There could be a significant risk to the environment if the most recent environmental assessments and identified mitigation are not used.</p>	<p>The EA would expect the water company to:</p> <ul style="list-style-type: none"> • update its Draft Plan with the latest HRA and SEA assessment, also update its WFD information. 	<p>We have updated the HRA, SEA and WFD assessments to reflect the latest environmental assessments undertaken to support the Test Drought Permit submission in summer 2022. We are sharing these with the EA and Natural England.</p>
R3.2 Test and Itchen HRA	<p>We note that work that has been undertaken on the HRA for the Drought Plan has not been referenced in this dWRMP and this should be updated once this work concludes, particularly around the presence of Itchen salmon in the Lower Test. Until such time, the HRA and SEA will be out of date and erroneous with regard to these</p>		<ul style="list-style-type: none"> • further details on mitigations for its proposed options should be provided, this includes detailed monitoring for water quality to be shared with the EA in due course 	<p>We have included additional monitoring assessment and mitigation commitments regarding the River Test drought permit risks with the permit's monitoring and mitigation plan. These are being implemented. They cover the risk to River Itchen salmon straying to the River Test .</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
	<p>elements. Therefore, we would expect Southern Water to update the HRA and SEA assessment in its revised dWRMP24 and clearly explain for any new changes.</p> <p>Some of the WFD information the company has used in its assessments is out of date and should be updated for the final Drought Plan.</p> <p>Where the company has identified the need for mitigation for some of its proposals, it needs to provide further detail and assessment of possible options shared. We have identified gaps in proposals for monitoring, particularly with regard to water quality.</p>			

Reference	EA comment	EA position	EA recommendation	Southern Water response
R3.3 Testwood MAR (Managed Aquifer Recharge) 5.5MI/d (by 2041-42) Lack detailed SEA assessment	EA previously raised concerns over the feasibility of this option. This scheme may not deliver the output required due to physical constraints especially in relation to the capacity of the aquifer (limited storage/tight chalk) and the fact that the discharge would have to overcome artesian pressure. This also include flood risk consideration and licensing. We would like to know whether there is any interaction with the River Itchen.	We believe there are considerable environmental and political risks around this option requiring a lot more assessment.	Significant further assessment is required to understand the viability of this option. The company should consider an alternative option due to significant environmental risks involved in the current option.	We recognise that considerable amount of work needs to be done to assess the feasibility of this option and any potential environmental impacts. We have allowed a lead-in time of at least 10 years for investigations to be completed. A number of respondents to this consultation have asked us to consider Aquifer Storage and Recovery (ASR) options. Annex 8 of our SoR provides an overview of the work we have done on ASR/MAR schemes.
R3.4 Isle of Wight Drought Permit	The company are relying on using the Caul Bourne (Lukely Brook) drought permit in a 1-in-200 year event until 2041, also in an 'additional scenario' which doesn't state clearly a return period (1-in-100	Risk to the environment if appropriate mitigation measures are not identified. Risk to the environment if appropriate mitigation measures are not identified.	As the Isle of Wight drought permit currently does not have appropriate mitigation identified other alternative options need to be fully explored. Southern Water should identify appropriate mitigation measures for the Isle of Wight Drought Permit	We are finalising the HRAs for drought permits on the Isle of Wight and once complete will share them with our environmental regulators.

Reference	EA comment	EA position	EA recommendation	Southern Water response
	<p>event or 1-in-200 event)</p> <p>We have concerns over this reliance as appropriate mitigation has not been demonstrated.</p>		<p>In its SoR, the company should justify selection of this option and explain why contingency options in Annex 22 cannot be brought forward to reduce this reliance.</p>	
R3.5 Sandown Wastewater Treatment Work to Eastern Yar (8.1MI/d) by 2028	<p>The water company has provided limited detail around this option, given an imminent delivery date by 2027-28. Southern Water stated in page 141 of the main technical plan that 'Quality of treated effluent likely to be less favourable quality' (than presumably the river at point of discharge).</p> <p>This would need to be evaluated to determine if would cause WFD non-compliance/deterioration. The EA cannot permit any deterioration under WFD therefore any proposed option is required to be fully assessed to ensure that it does not pose</p>	<p>The lack of details in proposed option and direct discharge into the river before the treatment could potentially pose serious environmental risks, therefore we require full WFD assessment as well as more detailed HRA and SEA.</p>	<p>Southern Water needs to clarify whether the proposed option requires further treatment prior to discharge into the river.</p> <p>The untreated discharge might cause serious environmental impacts; therefore, we would expect Southern Water to fully assess the effluent streams and prevent any potential risk to the river. Also, the Drinking Water standards would need to be considered for abstraction at downstream.</p> <p>EA would need to see the level of assessment of the risks and avoidance/mitigation measures subject to deeper analysis before we accept the HRA (and SEA) conclusions for this option.</p>	<p>The phrase 'quality of treated effluent likely to be less favourable' was referring to the WTW and the lack of de-nitrification before the existing release to sea. Therefore additional treatment will be required to a) de-nitrify and b) reduce the salinity. The proposed process train would be a Full Advanced Treatment (FAT) along with an additional extension to the WTW to de-nitrify.</p> <p>There is no proposal to release final effluent to the river, without additional treatment. This was never considered as part of the proposal.</p> <p>The mitigation proposed is additional treatment to a) de-nitrify and b) reduce the salinity of the final effluent or (c) consider an alternative release location. The proposed process train would be a FAT along with an additional extension to the WTW to de-nitrify beforehand.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
	any environmental risks and deterioration.		Further hydrological assessment is also required during a low flow in a drought event and any subsequent impacts on water quality needs to be assessed.	Hydrological assessment and marine surveys are underway to understand the impact on water quality.
R3.6 Romsey groundwater	We support the company's commitment within the plan to protect the rare and important chalk streams within SSD, but it appears contradictory that Southern Water proposes options which effectively increase abstraction in some chalk catchments (e.g. Romsey groundwater option).	The risk to the environment due to increased abstraction in the chalk stream catchment	The EA would expect clear explanation and justification for the proposed option to ensure this does not pose any significant impact on the chalk stream [SI]	<p>Please see Annex 9 of our revised dWRMP24 for further discussion of this option.</p> <p>Our Environmental Assessments will be updated to reflect the risks around these groundwater options and we will undertake further sensitivity testing of our strategy with these options excluded to understand the implications if any environmental impacts cannot be mitigated.</p> <p>In the case of Romsey our recent CSMG WINEP investigation showed that the impacted reach of the River Test was likely to be compliant with these enhanced flow targets under both Recent Actual and Full Licenced conditions. However, we still need to undertake and review the outcome of planned No Deterioration investigations on this source.</p>
R3.7 Clarifications around SESRO and Havant Thicket	There is a lack of description for these strategic options. SESRO 100 is selected in the WRSE Best Value Plan at 2040 to meet all the pathways set out in the adaptive plan. However, the reasoning provided on the size of SESRO selected shows the decision is marginal.	<p>The lack of details around the description of this option and lack of full environmental assessment, we are unable to provide full review and comments on this option.</p> <p>The option is interlinked with many other options across the regional group, therefore lack details</p>	<p>The company should provide further explanation and description for this option. Southern Water should reference or signpost to the environmental assessments that has been done in its revised dWRMP24.</p> <p>Given the importance of this resource scheme in providing a large transfer to Southern Water we recommend Southern</p>	WRSE has carried out extensive testing as part of the revised Regional Plan. This has resulted in 150Mm ³ SESRO being selected in the revised Regional Plan. This is discussed in our revised dWRMP24.

Reference	EA comment	EA position	EA recommendation	Southern Water response
	<p>There is limited detail provided on SESRO (Thames Water to Southern Water) and Havant Thicket and no reference to environmental assessment is included for either. These options are closely linked with many other options in the plan therefore pose potential risks. Not enough sensitivity testing around Havant Thicket recycling option and pipeline sizes are included in the submission.</p>	<p>around it including sensitivity testing, will pose potential environmental and security of supply risks for other water companies.</p>	<p>Water work with WRSE, Thames Water and Affinity Water to provide further evidence and reasoning that the size of reservoir selected (100Mm3 or 150Mm3) is the most appropriate.</p>	
R3.8 Havant Thicket plus recycling	<p>Regarding Havant Thicket Plus option, we are closely involved with the Gated Process and have previously provided our comments at Gate 2 stage. The comments provided remain live and valid to be addressed by Southern Water, some of the main concerns are e.g. water quality implications as a result of discharge, pipeline routes and associated risks if it is crossing</p>	<p>Potential risk to the environment</p>	<p>We would expect that you refer to our detailed comments provided as part of Gate 2 and address our concerns, to ensure the potential environmental risks are minimised.</p>	<p>We refer to the EA detailed comments as part of the environmental assessments associated with RAPID Gated process. This is also covered in Annex 6 to our SoR.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
	<p>rivers, etc. We would expect Southern Water to work with us and Natural England to address the ongoing concerns we have raised in order that the schemes minimise any risks to the environment.</p>			
R4.1 Clarity on assumptions used and justification for Best Value Plan (BVP)	<p>The company has provided some description of the decision making methodology. However, given the complexity of the decision making approach taken Southern Water should provide further detail and justification of the preferred programme (section 7.3 of main report provides some comparison of least cost and best value but little in way of justification). Southern Water have not clearly evidenced the assumptions or methods used as part of the decision-making process.</p>	<p>Clear explanation on the assumptions used and methodology undertaken in the decision-making process, and selection of the preferred options is required in the final plan for the Southern Water's customers and wider stakeholders.</p> <p>Lack of detail and clarity around selection of preferred options, impose great uncertainties on their viability and potential risks to the environment and to the customers on</p>	<p>Southern Water should:</p> <ul style="list-style-type: none"> provide further detail and justification of the preferred programme and how the metrics and investment model were used to move from least cost programme to best value comparison table showing the different options between Least Cost and the final preferred Best Value Plan would be helpful. <p>We would expect Southern Water to provide:</p> <ul style="list-style-type: none"> a narrative to provide enough explanation and justification on 	<p>We have provided additional explanation on the development of our preferred plan and how it has been influenced by the Best Value metrics. We have worked with WRSE to provide additional text to ensure that the use of Best Value metrics in the investment model is properly captured.</p> <p>Tables 7.6-7.8 in our dWRMP24 technical report did provide a comparison of key differences between the Least Cost Plan and the Best Value Plan. We will retain the comparison in our revised dWRMP24.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
	<p>However, it is unclear from the plan what exact assumptions have been used to inform Southern Water's decision-making. Although it is explained that the investment model (IVM) has been used to select a range of preferred options by mathematically optimising across the different best value metrics, it is unclear and difficult to understand the precision methods used for Southern Water's decision-making Appendix 9 represent different IVM outcomes for preferred options, however there is not much detail or narrative included around how Southern Water has selected BV options, neither is there sufficient demonstration around how BVP criteria are implemented in the assessment.</p>	<p>their future security of supply.</p>	<p>selected preferred options (e.g. Annex 21 set outs model runs but does not provide any narrative)</p> <ul style="list-style-type: none"> • further narrative clearly setting out how preferred programme meets the objectives set out, would be beneficial • more details, narratives, and evidence around selection of your Best Value Planning options in your Final Plan <p>The BVP description is not backed up with justification how you have used the criteria.</p>	

Reference	EA comment	EA position	EA recommendation	Southern Water response
R4.2 Sensitivity testing on BVP options	<p>Whilst some sensitivity testing has been carried out, we recommend the company undertake further sensitivity testing to explore how to plan could adapt to delays or changes to key options, for example a delay to Havant Thicket.</p> <p>It is not clear if sensitivity testing has been carried out on Least Cost Plan or the Best Value Plan.</p>	Potential risk to security of supply	We recommend the company consider sensitivity testing on the Best Value Plan to test how robust it is and to ensure it identifies risks and mitigates them appropriately or justify why it is appropriate to undertake the sensitivity testing on Least Cost Plan.	<p>We have run sensitivity analyses on both Least Cost Plan and Best Value Plan for the revised dWRMP24.</p> <p>We have used Least Cost Plan for sensitivity runs in cases where we want to explore the alternatives more fully, without constraining the investment model to the best value metrics values of the core Best Value Plan.</p> <p>Sensitivity runs on Best Value Plan may involve finding alternative options that meet or exceed the best value metres of the core Best Value Plan. This can lead to a failure of the sensitivity run even though an alternative with a lower values of best value metrics is available.</p>
R4.3 Adaptive plan monitoring	<p>Southern Water has provided a Monitoring Plan for its adaptive Best Value Plan in Annex 21. However, it is not clear how in planning cycle changes would be monitored and actioned. For example, given the uncertainty with demand management how will the plan adapt if less savings achieved than planned for be dealt with?</p> <p>The supplementary guidance on adaptive planning states your</p>	Potential risk to the environment	<p>The EA would expect Southern Water to include explanation on how monitoring of adaptive plan will be undertaken. The company needs to make it clear how changes within planning cycle will be accounted for or changes before the defined decision points.</p> <p>Southern Water should ensure that it sets out the thresholds or explained when a change would be triggered, as pre the supplementary guidance on Adaptive Planning.]</p>	We have updated our adaptive Monitoring Plan to derive specific decision points and metrics at a scheme level that will trigger scheme development for each adaptive plan branch or 'situation'

Reference	EA comment	EA position	EA recommendation	Southern Water response
	plan should identify thresholds, when thresholds been reached and what action you will take when threshold is reached			
R4.4 The assessments for the alternative options	<p>Southern Water provided some details on the methodology in Section 4.4.3. for assessing alternatives, however there is no evidence that alternative plans have been assessed. Information on alternative plans have not been included, including their respective effects and justification for discounting them.</p> <p>The development process for the preferred options is described but the reasons for selecting the final shortlist and how the SEA, HRA and WFD have influenced the refinement process is not provided. This lack of transparency could call into question the decision making on</p>	<p>The lack of detail on the full list of alternatives considered and justification for selection/not being taken forward mean that the SEA does not meet the requirements of the regulations. As a result, this may reduce the effectiveness of the WRMP and pose a risk to the environment.</p> <p>As there is not enough detail on the justification of alternatives, there is the potential for less damaging solutions to have been missed out and not carried forward which would create greater risk to the environment. This is a potential non-compliance</p>	<p>Southern Water need to include a summary of the results of the options screening process in section 4.4.3 and the reasons for selecting the preferred options in section 5.</p> <p>Assess the alternative plans and provide narrative on the reasons why the plans were discounted.</p> <p>Include further commentary on how the SEA has influenced the development of the WRMP24, options selected and any mitigation and monitoring requirements.</p>	<p>Section 4.4.3 of the Environmental Report sets out the approach to assessing any reasonable alternatives to the plan. Section 5 presents the findings. This has been revised to reflect further consideration of the reasonable alternatives (taking into account the Least Cost Plan, scenarios and adaptive plan pathways).</p> <p>Section 5.2 outlines how the individual option assessments have been used as part of the detailed option screening process, with reference to the following criteria:</p> <ul style="list-style-type: none"> • Environmental and social assessment • Mutual exclusivities and dependencies • Risks • Phasing • Resilience. <p>Individual SEA option assessments have also been transposed into metric values that have then been used in decision making to inform the selection of the Best Value Plan. Further information is provided on this process in the technical annexes including Annex 23 which contains WRSE option appraisal methodology.</p> <p>Annex 12 of the revised dWRMP24 summarises the outcome of option appraisal process which provides evidence of how environmental effects identified by either the SEA, HRA or WFD have been taken into account. In order to comply with Security and Emergency Measures Directive (SEMD), we will share Annex 12 with regulators and make copies available to others on request. We are carrying out high level assessments on the environmental impacts of the mitigation</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
	<p>any more contentious options.</p> <p>The options screening process has been described but the full unconstrained options list has not been presented alongside the SEA and no commentary has been provided in the report on the outcomes of the screening process or why some options were not taken forward.</p> <p>It also isn't clear how the outcomes of the SEA have influenced the options selection process for the dWRMP or any mitigation/monitoring requirements.</p> <p>Although some details are provided on mitigation and monitoring in Sections 8 and 9.3, reference is made to further investigations and monitoring being required to determine effects and to define/refine mitigation options and to these being made available</p>	<p>issue and risk of challenge or objection if all relevant information on option selection and the WRMP's response to the SEA findings isn't addressed in the final SEA report and WRMP.</p>		<p>measures we are discussing with the EA and Natural England.</p> <p>As well as considering alternatives in our environmental assessments we have looked at a number of alternative options in the mitigation plan work that we describe in more detail in our rdWRMP24 and in annex 27.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
	<p>at a later date. Whilst it is appreciated that further assessment work will inevitably need to take place at a project level as part of the planning process, sufficient definition of mitigation and commitment to this should be provided in the SEA to assist the option assessment and consultation processes and provide confidence that any significant adverse effects can be adequately mitigated to ensure risks to the environment are minimised.</p> <p>Therefore, key issues are:</p> <ul style="list-style-type: none"> • There is not detailed justification as to why alternatives were or were not taken forward. • No commentary has been provided on the outcomes of the screening process. • There is no evidence that alternative plans assessed as part of 			

Reference	EA comment	EA position	EA recommendation	Southern Water response
	the WRMP development have been assessed.			
R4.5 How SEA have influenced the options selection	<p>Section 9.1. of the Environmental Report states that 'The SEA, along with the findings of the HRA and WFD assessment, have been used to help inform the development of the dWRMP24'.</p> <p>However, the report is lacking in specific details or examples, and neither is any clarification provided within the WRMP itself.</p> <p>Whilst the SEA Environmental Report states that the SEA has shaped the WRMP, there is little detail to evidence exactly how.</p> <p>It is not clear how the outcomes of the SEA have influenced the options selection process for the WRMP.</p>	<p>The purpose of the SEA is to inform the WRMP and if there is no clear examples of how the SEA has influenced the WRMP, then this may lead to increased risk of legal challenge or significant issues being missed in the delivery of the plan.</p> <p>As is evident from Table 7.1, implementation of the plan would result in a number of significant adverse environmental effects. It is not clear whether the opportunities have been taken through the iterative SEA process to fully explore avoiding or reducing these effects further.</p>	<p>The Environmental Report and WRMP should be amended to include clear examples of how the outcomes of the SEA has changed the plan.</p>	<p>Section 5.2 of the Environmental Report states that: 'In moving from constrained options to preferred options, the reasons why options have not been selected includes effects identified through the SEA (and HRA and WFD processes), for example:</p> <ul style="list-style-type: none"> • Potential effects upon SSSI/SAC from options which could not be addressed by standard mitigation measures or construction best practice (or arise from option operation) with an acknowledgement that any adverse unmitigable effects would increase risk of planning consent not being granted. • Significant and potentially non-compliant effects on water quality from option operation during period of low flows. • Option uncertainties arising from insufficient progress on option definition resulting in potential, environmental effects. <p>This section has been revised to reflect the provision of additional detail as appropriate.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
R4.6 Natural Capital (NC) and Biodiversity Net Gain (BNG) assessments	<p>Southern Water has not provided any Natural Capital or Biodiversity Net Gain (BNG) reports, either as an appendix to the dWRMP or the SEA. Natural Capital is considered qualitatively in Appendix H (preferred options assessment tables) of the SEA, but it does not fully meet EA expectations.</p> <p>In the dWRMP, Natural Capital and BNG are stated as key metrics within the Best Value Plan objectives, thus is included in the investment model which influences decision making. However, no methodology, reporting or interpretation and analysis is provided. Also it is stated that Natural Capital results and SEA results are both input metrics to the investment model decision making processes, as there is no Natural Capital methodology, as</p>	<p>Lack clarity in the methodology used and no evidence on how NC or BNG assessment were conducted appropriately and incorporated in the Best Value Planning decision-making. This might pose some potential risks to the environment.</p>	<p>The EA would expect Southern Water:</p> <ul style="list-style-type: none"> to provide Natural Capital assessment which details the work undertaken by WRSE and explain clearly how the methodology is adopted and used in its plan <p>Southern Water needs to set out a clear justification for adopting WRSE methodology, provide assessment on both the quantitative and monetary impact of each option, and a demonstration of how these options can provide a quantifiable benefit to the environment and society.</p>	<p>In the draft regional plan, WRSE considered several additional, non-monetised criteria alongside cost and carbon cost to identify its best value plan. The criteria and metrics used to identify our best value plan included natural capital creation and biodiversity net gain.</p> <p>The WRSE regional plan has calculated Biodiversity Net Gain (BNG) for all options available for selection as part of the regional plan investment modelling. These assessments do not take account of the likely consent route for the individual options and apply a 10% net gain across the board for individual schemes.</p> <p>WRSE's approach to the consideration of BNG is considered to be an appropriate approach at this plan making scale, and a robust basis for quantifying BNG for the plan as a whole.</p> <p>The criteria and metrics used by the WRSE draft regional plan to identify our best value plan were:</p> <ul style="list-style-type: none"> Options customers prefer (based on customer research undertaken for the draft regional plan) Environmental benefits (based on our Strategic Environmental Assessment) Environmental disbenefits (based on our Strategic Environmental Assessment) Natural capital creation (based on our environmental assessment) Biodiversity net-gain (based on our environmental assessment) Resilience (based on our resilience framework assessment) Spreading the cost across future generations (using the Government's Long-Term Discount Rate). <p>The best value plan creates more natural capital, improves biodiversity, has less overall impact on the environment and</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
	reported it is not clear if the methodologies are aligned.			increases the resilience of our water supplies when compared to the plan that just considers economic cost (least cost plan).
			Southern Water should ensure that Natural Capital and SEA results and methodologies are aligned.	
R4.7 Resilience in 1-in-500 sensitivity testing	The water company has stated its decision to be resilient to 1-in-500 years drought event and to not use drought permits and orders in droughts up to 1-in-500 year severity after 2040. The company has not tested whether it could be best value to meet this resilience earlier.	Lack clarity and justification	<p>Southern Water should provide more explanation on its plan to be resilience to 1-in-500 years.</p> <p>It should undertake sensitivity testing to show why meeting 1-in-500 resilience by 2039/40 is best value and whether it could be met earlier.</p>	<p>The need to achieve 1-in-500 year resilience by 2040 is set out in the WRPG. In addition to meeting this level of resilience we agreed a common principal across the WRSE group of companies that 1-in-500 year resilience should be achieved without use of drought permits or orders and therefore we have considered both policies in combination, i.e. the termination of use of drought permits and orders is set to be closely coincident with the timing of achieving 1-in-500 year resilience as the alternative supply schemes required address both challenges.</p> <p>For our dWRMP24 we considered the timing of achieving 1-in-500 year resilience and cessation of the use of drought permits and orders at a regional level through sensitivity runs which examined impacts on the Least Cost Plan through achieving this resilience at different intervals. These assessments considered the impacts if the 1-in-500 year resilience date was brought forward to 2037 or pushed back to 2052.</p> <p>Generally these sensitivity runs show that, achieving 1-in-500 resilience earlier than 2040 is less cost efficient (i.e. more expensive) than deferring it until later in the planning period.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
				For our revised dWRMP24 we will repeat these sensitivity assessments with WRSE.
R4.8 Presentation of problem characteristic metrics	The results from the problem characterisation assessment appears to be different in the main report page 48 compared with 'Annex 3: Problem Characterisation' Table 2.	Lack clarity in the information presented	Southern Water needs to ensure the outcome of its problem characterisation is clearly presented and it is aligned between the main plan and the Annex 3. [SI]	We have updated our problem characterisation in Annex 3 so that it correctly aligns with the main report and the individual area level assessments.
R5.1 Not meeting PCC target in dry year annual average planning scenario (DYAA)	<p>The company's planned reduction in average per capita consumption does not fully deliver the government expectation of 110 litres/person/day by 2050 (in dry year planning scenario). Achieving this will be hugely important to help maintain customer supplies and protect the environment.</p> <p>The company have explained that Southern Water will not be meeting its ambitious Target 100 (T100) by 2040 and proposed achieving 109 l/h/d (in Normal year) by 2040 instead,</p>	Does not meet Government expectations	<p>The company should explore additional options to include to meet the national target policy expectation (110l/h/d in dry year). It is essential that the company continuously monitors and reacts to delivery progress.</p> <p>We would expect Southern Water to be clear and transparent regarding not meeting its PCC national targets in its Draft Plan, and also to provide justification around this. We would also expect to see a realistic targets and evidence that water company will be meeting these by 2050.</p>	<p>We have revised our demand management programme to achieve a PCC of 110l/h/d by 2045 under dry year conditions. This is 5 years ahead of the 2050 target date set by the Government.</p> <p>We have also tested a scenario that achieves a dry year PCC of 98l/h/d by 2045.</p> <p>We have also incorporated savings from Government interventions into our demand management strategy. In this regard, we have adopted the profiles developed by WRSE to account for the impact of Government interventions on PCC.</p> <p>We had revised our T100 aspiration in view of the restrictions imposed as part of the COVID-19 and the impact it had on working patterns. PCC increased significantly during periods of lockdown. It has come down since restrictions have been lifted but is still higher than pre COVID-19 levels. We are forecasting it to reduce further over the remainder of AMP7 but as a part of workforce continues to work partly from home, the baseline PCC for AMP8 and beyond remains much higher than was forecast as part of WRMP19. This makes our already ambitious T100 programme even more challenging.</p> <p>We consider the target of 110l/h/d by 2045 under dry year conditions to be stretching but achievable given Government</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
	<p>to maintain your ambitious target level.</p> <p>Southern Water in particular sought EA' views on 'the balance of this approach. In particular if we should plan on meeting T100 alone and the associated delivery risk as we currently understand it, or, as in this Plan, have a demand forecast aligned to the National PCC targets but continue a programme to see if we can confidently achieve the T100 profile allowing the future plans to adjust based on the findings'.</p> <p>We understand that WRMP19 is accounted and planned around T100 therefore, Southern Water should have a demand forecast aligned to the National PCC targets, and we do not pose any objections if the water company would want to continue a programme to achieve the T100 by 2040, however it is expected</p>			<p>interventions. This effectively means a normal year PCC of 100l/h/d by 2045.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response	
	<p>to be a realistic target and Southern Water needs to demonstrate that this can be achieved.</p> <p>It appears that Southern Water have not included the saving assumed with Government interventions in its dWRMP24, although this is not clear in the plan.</p> <p>We advise the water company to consider accounting for this in its PCC.</p>				
R5.2	<p>It is not clear how the demand forecast, and target headroom are estimated</p>	<p>The non-household demand methodology appears to be appropriate. However, there is limited information and no evidence how the measured/unmeasured household and non-household properties were estimated. the on the input data or the results of the non-household demand</p>	<p>Lack clarity and explanation on data and information presented</p>	<p>The EA would expect Southern Water to provide more details and evidence around how it has conducted demand forecast methodology for household and non-household properties, what are the inputs and outcomes.</p>	<p>The growth forecast commissioned by WRSE provided forecast on non-household population but not on non-household properties. We have therefore used our current non-household occupancy estimates to project growth in non-household properties. All growth is assigned to measured non-households as all new connections (households and non-households) are metered. The number of unmeasured non-household properties, which account for ca. 5% our total non-household connections, is kept constant through the planning period.</p> <p>We have made changes to our household and non-household demand forecast. These are described in our revised dWRMP24.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
	<p>forecasting, which makes it difficult to appropriately assess the methodology and inputs.</p> <p>Section 5.4 of the plan states that 'Target headroom figures for each WRZ are provided in Annex 10', however we could not find the data on this in the annex and only the supply demand balance graphs are provided.</p> <p>The explanation provided in section 5.4 requires including more detail as it appears to only provide a summary.</p>		<p>Southern Water need to ensure providing Annex 10 which includes target headroom figures and data, so we can properly review the calculations and include more detail in the main technical report around target headroom assumptions.</p> <p>Southern Water should explain if its target headroom methodology in its dWRMP24 is aligned with WRSE methodology or not.</p>	<p>We have included more detail on target headroom figures in the revised dWRMP24</p> <p>We have followed the WRSE target headroom approach for our WRMP24</p>
R5.3 Removing any demand saving benefits from the baseline supply assumption	Southern Water has included non-household demand DO benefit in its baseline supply forecast as well as selected this as an option.	Lack compliance in data presented	We would expect WC to remove non household demand reduction benefits from its baseline demand data tables, and also to ensure providing a clear and complete explanation on household and non-household demands methodology.	We have removed water efficiency savings that had been built into the non-household demand forecasts. A comparison of the dWRMP24 baseline non-household demand forecast with the revised forecast is included in the revised dWRMP24.

Reference	EA comment	EA position	EA recommendation	Southern Water response
R5.4 Reduction in non-household consumption	<p>The company forecast a 3.4% increase in non-household consumption by 2037-38 from 2019-20 levels.</p> <p>The company's Draft Plan currently includes an increase in non-household consumption. We expect all companies to reduce non-household consumption and contribute to a 9% reduction by 2037-38 as part of the Environment Act target or justify why this not possible.</p> <p>Water companies should work with retailers to improve water efficiency and incentives for the non-household sector. We expect this to be a priority for the next 5-10 years.</p>	<p>As per government expectations, all companies should assist non-household users to sustainably reduce their water use.</p> <p>Reducing non-household demand plays an important part in reducing overall water demand and thereby helping to maintain customer supplies and protect the environment</p>	<p>The company should review its approach to non-households to ensure it has robust plans to reduce consumption by 2037/38 in contribution to the water demand target. It should consider additional options, in collaboration with retailers, to reduce non-household consumption, including the assessment of smart metering for all non-households (if it has not already done so). By exception where reduction in non-household consumption is not considered possible this should be clearly justified.</p>	<p>Our demand management strategy now includes reduction in non-household demand by 12% up to 2037-38. We are forecasting non-household demand to increase thereafter as a result of growth but non-household demand at the end of the planning period is still forecast to be lower than 2019-20.</p> <p>We have also carried out an optioneering exercise to identify options that will allow us to reduce non-household consumption. Installing smart meters is a key part of the strategy. We plan to replace the bulk of our existing non-household meters with smart meters by 2030 with the remainder being replaced by 2035.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
R6.1 Pulborough Groundwater sustainability reduction	<p>The Pulborough licence may need to change following the conclusion of an investigation into the sustainability of the Pulborough groundwater licence (concludes 2025). The EA's understanding from discussions locally that the company is committed to implement any required action as soon as possible after this date and will also consider the potential for loss of the groundwater licence.</p> <p>In Southern Water's dWRMP24, the company has included a 'worst case' scenario where they consider the groundwater licence may be lost beyond 2040, however it has not clearly shown that it has considered the range of possible outcomes that could result from the sustainability investigation, when these might happen or what actions would need to be taken to</p>	<p>Lack clarity around the proposed sustainability reduction on Pulborough groundwater licence could lead to potential significant risk to the environment and the chalk groundwater sources.</p>	<p>Southern Water need to include a simple table outlining which of its environmental destination scenarios applies when (what years) in its proposed plan, and a summary of the main options that would be required. This should include a timeline of licence reductions/changes at a source level and the year these are being made so it is clear to stakeholders.</p>	<p>We have revised Annex 9 of our revised dWRMP24 to include additional discussion of the Pulborough groundwater licence and our approach to developing Environmental Destination scenarios for this WRZ.</p>
			<p>It should include a clear breakdown for the Pulborough groundwater licence and what it is currently assuming in its core pathway.</p>	<p>Please refer to Annex 9 of our revised dWRMP24.</p>
			<p>The company should include additional sensitivity scenarios to examine varying the timing and priority at which the Environmental Destination is delivered, particularly examining the range of possible outcomes for its Pulborough groundwater licence following completion of the investigation in 2025, and its River Itchen licences. This should include demonstrating alternative</p>	<p>Please refer to Annex 9 of our revised dWRMP24.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
	<p>enable these to be implemented. Therefore, it is not currently clear to stakeholders what the company's intentions are for the Pulborough groundwater licence or the resulting options that may be required to be brought forward to enable the company to take action before 2040, if it is needed.</p> <p>In an enquiry with Southern Water, EA has received all requested data, but the water company is expected to incorporate this data source by source in its revised dWRMP24 and share with its stakeholders.</p>		<p>options which may be selected as a result of any additional scenarios.</p> <p>The company should include additional justification for any decisions it has taken around the timings it has included for uncertain sustainability reductions, so stakeholders are clear as to what the company is intending (pending the outcome of any investigations).</p>	<p>Please refer to Annex 9 of our revised dWRMP24.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
R6.2 River Itchen time limited licence	<p>In Annex 9, the company has highlighted that its River Itchen licences expire in 2025 and state that 'Renewal is currently expected but future licence changes following WINEP studies are likely and considered in our Environmental Ambition scenarios'.</p> <p>Whilst the company mentions potential reductions in its central scenario and cessation of Itchen abstraction in its alternative scenario, there is little regarding likely dates, quantities and options/actions associated with these changes to enable them. Therefore, it isn't clear what the impacts of these potential scenarios are.</p>	Lack of details regarding licence changes can potentially pose risk to the environment and chalk streams sustainability.	<p>Southern Water need to include a simple table outlining which of its environmental ambition scenarios applies when (what years) in its proposed plan and a summary of the main options that would be required. This should include a timeline of licence reductions/changes at a source level and the year these are being made so it is clear to stakeholders.</p> <p>The company should include additional sensitivity scenarios to examine varying the timing and priority at which the Environmental destination is delivered, particularly examining the range of possible outcomes for its Pulborough groundwater licence following completion of the investigation in 2025 and its River Itchen licences. This should include demonstrating alternative options which may be selected as a result of any additional scenarios.</p>	We have revised Annex 9 of our revised dWRMP24 to include additional discussion of the Lower Itchen abstraction licences and our approach to developing Environmental Destination scenarios for this WRZ including consideration of the risk of licence reductions during licence renewal.

Reference	EA comment	EA position	EA recommendation	Southern Water response
R6.3 Environmental Destination investigations and timing of delivery	<p>We acknowledge water company's ambition for Environmental Destination by including a high scenario for 2050. We also understand that Southern Water will be investigating its abstraction reductions until 2027, before starting implementing those changes through WRMP29. Southern Water stated it may consider implementing mitigation measures (via WINEP).</p> <p>However, there isn't enough clarity over delivery timescales for schemes to clearly assess the delivery date (it says some may be in 2030s). Due to this uncertainty, there is not sufficient justification or clarity for the chosen dates for addressing flow issues (Appendix 9).</p> <p>Annex C shows the delivery profiled for different zones and appears to include significant reductions in DO in the 2030s,</p>	<p>As in line with WFD regulations, WFD flow failures should be resolved by the next RBMP end date, unless unfeasible or unaffordable. If the water company's assessment indicates that delivery by this deadline is not achievable then the plan should show why it is either unaffordable or unfeasible to deliver by 2033 and then propose a date before 2050, when the achievement is feasible and affordable.</p>	<p>We would expect Southern Water:</p> <ul style="list-style-type: none"> • clear justification on the chosen delivery timescales of its different schemes, so we are able to judge whether the plan will be compliant with the WFD regulations. • fully explains the phasing resolving WFD flow failures and provide justification for delivery deadlines. <p>The company must ensure that the justification is in line with the WFD regulations, to prevent any significant environmental risks.</p>	<p>Please refer to Annex 9 of our revised dWRMP24 for impact on timelines for Environmental Destination.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
	however the reasoning for why changes happen when (and the justification for not delivering faster to meet 2027 or 2033 RMBP deadlines) is not included.			
R6.4 Baseline rates for No Deterioration	The company frequently refer to No Deterioration baseline rates. We have never agreed those baseline rates and they usually equate to Deployable Output values rather than what they are supposed to relate to which is representative recent actual rates of abstraction.	Lack of clarity in data provided	We do not have any record of discussion with Southern Water around baseline rates for Environmental Destination. We expect the company to provide clarification. Further discussions are needed before we can support this assumption.	Please refer to Annex 9 of our revised dWRMP24.
R7.1 Bulk export to Portsmouth Water in 2040-41	The main plan page 156 states that 'low cost plan scenario selects a 45MI/d recycling plant for the HWTWRP instead of the 60MI/d sized plant required for the Best Value Plan. In both cases, the recycling option is needed by 2031'. However, it is also described only as a bi-directional pipeline, so we are unclear if this relates just to infrastructure or	Lack clarity in bulk supply transfers to neighbouring water companies, which can potentially pose a risk to security of supply. Misalignment of inter-company options does not provide the assurance to customers and regulators that transfers are reliable and whether any	Southern Water should provide: <ul style="list-style-type: none"> clarity on the bulk supply from Southern Water and Itchen catchment to Portsmouth Water and the year. more explanation on bidirectional pipeline and its implication on the Itchen catchment 	Portsmouth Water have requested to include an option to export water from Otterbourne WSW to Portsmouth Water. The volume from this transfer will ultimately come from HWTWRP in the event that Southern Water has surplus water. This exported water going to Portsmouth Water does not come from the River Itchen. More details are provided in Annex 6 of this SoR and Annex 29 of our revised dWRMP24.

Reference	EA comment	EA position	EA recommendation	Southern Water response
	<p>whether water is being exported from the Itchen catchment. There is a need for more clarification on this to be provided.</p> <p>The HRA has only considered the pipeline itself but not of the movement of water from one place to another. If water is to be exported from the Itchen catchment, a full assessment of the risks should be undertaken.</p>	<p>changes to transfers will affect security of supplies and/or the environment.</p>		
R7.2 Import from Portsmouth Water	<p>We understand there to be significant risks around the delivery of Portsmouth Water's (Source J) scheme, which is included in Southern Waters dWRMP24 at 9MI/d (by 2025-26) supply to Southern. It is not clear if this option does not deliver, what contingency options will be considered by Southern Water.</p> <p>The company states that the current import is limited by turbidity issues at Portsmouth end so it is receiving</p>	<p>Lack clarity in bulk supply transfers to neighbouring water companies, which can potentially pose a risk to security of supply</p>	<p>Southern Water should update the Source J DO in line with Portsmouth Water's latest assumptions.</p> <p>If Southern Water continue to include this source it should have a Contingency Plan or alternative.</p> <p>Southern Water should provide reassurance that the schemes relying on output from Havant Thicket Reservoir can reliably achieve the required output in drought events at the same time.</p>	<p>We have now been informed by Portsmouth Water that they can no longer provide the additional 9MI/d in the Western area. This option has been removed from the constrained options list for the revised dWRMP24.</p> <p>We have spoken to Portsmouth Water about the up to 15MI/d supply to Pulborough and have agreed that it can be included in our plan for up to 15MI/d supply.</p> <p>We will continue to work with Portsmouth Water and use a Pywr model to validate the WRSE solutions at a network/ hydrological scale.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
	<p>less than 5MI/d (max 15 MI/d).</p> <p>We note that there are many schemes that rely on output from Havant Thicket Reservoir. It is not clear in the dWRMP24 whether there is certainty that all these schemes can achieve the required output in critical periods/drought events at the same time?</p>			
R7.3 Southern Water to South East Water bulk supply alignment	The bulk supply transfers from Weir Wood to South East Water is expected until 2031. We understand the transfer will not be renewed beyond 2031 in Southern Water's plan, however this is not aligned with the assumption in South East Water's plan, as South East Water assumes this bulk transfer will continue beyond 2031.	Lack clarity and alignment in bulk supply transfer	Southern Water needs to ensure that the date and agreement on reduction in bulk transfer from Weir Wood reservoir to South East Water is represented correctly in the dWRMP24 and is aligned with South East Water's plan.	<p>In the modelling approach agreed by WRSE companies, all existing bulk supply agreements are treated as options once the existing contracts come to an end. They are then assessed by the investment model in the same way as other options. The same applies to bulk export to South East Water from Weir Wood Reservoir.</p> <p>WRSE produces a single output for all water companies and the core Least Cost Plan and Best Value Plan and signed off by all water companies. Once the revised outputs are provided by WRSE, we will liaise with South East Water to ensure that all bulk transfers between the two companies are consistently represented in both companies' plans.</p>
11.1 Medway WTW Recycling Medway indirect potable water	The Southern Water sites at Aylesford and Burham have a risk of flooding to parts of the sites. We are currently undertaking a business case looking	This option could potentially pose some environmental risks and requires further assessments.	More detailed comments for this option will be made through our upcoming charged consultation agreement with Southern Water.	<p>The siting of the proposed recycling plant will be outside of the flood plain.</p> <p>We have noted the comments. Our revised dWRMP24 only includes the variant that discharges to Eccles lake.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
reuse - Barming or Wateringbury) (12.8 MI/d) by 2031	<p>at the future of flood alleviation within the area.</p> <p>The EA is concerned that it may not be viable to continue to maintain the standard of protection provided by these existing assets into the future and it may be more appropriate to have managed realignment of structures set further back. This may have an impact on these sites, or the ability to access, or operate them into the future. It would therefore be beneficial for us to look together to see whether there are opportunities to align objectives to collaborate should the site be assessed as suitable.</p> <p>Significant water quality issues have been previously raised with Southern Water. Increased treated water being discharged into upstream freshwater section of River</p>		<p>We recommend contacting the EA's Medway Estuary and Swale Flood Alleviation Scheme project team to explore any future opportunities for collaboration.</p> <p>An assessment is required, investigating how the scheme would change the water balance of this part of the River Medway catchment and how that change could result in a dynamic, whereby the 'brackishness' of water of the River Medway increases and whether this could also have a detrimental effect of yields that could sustainably be abstracted from South East Water's nearby groundwater abstractions.</p> <p>EA would suggest consideration of potential cumulative impacts with South East Water plans, for continued development of their Butler abstraction.</p> <p>Southern Water's own analyses has highlighted potential resilience issues in the future with this as a</p>	<p>Environmental studies, surveys and investigations are currently being planned and procured.</p> <p>River modelling has been commissioned to assess the required treatment standard and the effects of discharge to the river.</p> <p>We have not revised the delivery date for this option in the revised dWRMP24.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
	<p>Medway, would be very damaging.</p> <p>The scheme has the potential of changing the water balance of this part of the River Medway catchment, potentially resulting in changes that could alter the 'brackishness' of water of the River Medway.</p> <p>Therefore, the acceptability of this scheme is mostly dependent on the technically achievable standards of the discharged effluent.</p> <p>We understood that South East Water is no longer involved as part of this scheme and it doesn't feature in the Southern Water's WRMP. We would require clarification on this on-going discussions between Southern Water and the EA, several options are still being explored. EA reiterate that the preference for the treated water to be direct to Eccles Lake but indirect options</p>		<p>drought option. We would expect more explanation on this.</p> <p>Further details and a more detailed environmental assessment would be needed on how scheme will be operated in relation to the wider River Medway Scheme as a whole to understand other potentially significant implications on the Medway system.</p> <p>If there will be a discharged chemical into the environment, it will potentially require an environmental permit from the EA.</p> <p>Further discussion is required regarding this option as it has not been outlined/discussed with respect to groundwater quality restraints.</p> <p>The EA would like to understand if there is any impact upon required delivery time scales of the option.</p>	

Reference	EA comment	EA position	EA recommendation	Southern Water response
	<p>(utilising the River Medway) appears to be progressing and are only referred to in this plan. EA still awaiting written confirmation of how the scheme will be operated and how it will operate in conjunction with the existing River Medway Scheme.</p> <p>We would expect an evidence and more detailed assessments on potential impacts from Eccles Lake option, before we can consider it as a feasible option.</p> <p>The groundwater quality will need to be considered. It will be important to consider the nutrients, and any other contaminants in the treated effluent, and the loading to the river.</p> <p>Appropriate assessments will be needed to.</p> <p>There are also concerns over the scale of the proposal</p>			

Reference	EA comment	EA position	EA recommendation	Southern Water response
	would mean the delivery deadline of 2031 is challenging. Depending on which of the two Medway proposals is being taken forward, Southern Water need to consider treatment requirements for their existing estuarine permits could be different to new permits they would require to discharge elsewhere. Significant construction could be required to enhance treatment.			
11.2 Woolston recycling from 2059 Concerns over environmental risks	<p>Although this option is selected later in the planning period, there are some serious environmental concerns which need to be considered and addressed by Southern Water.</p> <p>EA and Natural England have previously rejected similar schemes (through gated process) which involve any discharge to the Itchen, so we would have the same concerns regarding the</p>	The option carries considerable uncertainty and risk and should not proceed, unless it were modified to transfer the treated effluent direct to the Otterbourne WSW or Portsmouth Water source, and thus not involve a discharge to the River Itchen.	<p>Significant further assessment is required to understand the viability of this option.</p> <p>Under current situation there are concerns around feasibility of this option, therefore the water company needs to consider alternative option.</p>	Following Feedback by the EA and Natural England, we have removed this option from the feasible options list. The option is therefore not considered for the revised dWRMP24.

Reference	EA comment	EA position	EA recommendation	Southern Water response
	<p>location of the discharge of water, brine disposal etc. Therefore, we are unlikely to support this option in its current format for future use.</p> <p>Because of lack of details provided by Southern Water, we are unable to reach a position on this proposal as we are uncertain about assumptions made regarding the hydrological pathways, which may result in ecological risk.</p> <p>Further assessment is essential for understanding the viability of this option and we are unable to provide further comments until this has been undertaken and information is provided by Southern Water.</p>			
11.3 Sittingbourne Industrial Reuse (7.50MI/d) by 2031	It is unclear if this will lead to a net reduction in local abstraction or to licence trading that could enable Southern Water to offset and	This option could potentially pose some environmental risks and requires further assessments.	If this will lead to local reductions, then increased groundwater-related flooding is a potential risk to be considered.	We have noted the comments and will be taking them into account as we progress work on this scheme. We will also liaise with the EA, Natural England and any other stakeholders as part of the process.

Reference	EA comment	EA position	EA recommendation	Southern Water response
	<p>abstract more at another site.</p> <p>In Annex 18 SEA Appendix H notes include 'No effects anticipated for chalk rivers', however the freshwater inflow to the creek is fed by the chalk aquifer.</p> <p>Any groundwater abstraction must not affect the input of freshwater into Milton Creek as this provides important habitats for SPA birds communities. If significant reductions are predicted, then suitable impact assessments would be required to ensure that sufficient freshwater flows remain to maintain the food/drinking water for birds on the creek mudflats/channel.</p> <p>Southern Water also need to consider water quality because of past contamination incidents around Sittingbourne.</p>		<p>Southern Water will need to show if this option would lead to a reduction (or not) in chalk inflows to the creek.</p>	

Reference	EA comment	EA position	EA recommendation	Southern Water response
11.4 Horsham recycling (2055)	<p>Although this option is selected later in the plan, there are some serious environmental concerns which need to be considered by Southern Water.</p> <p>We believe this option might not be feasible if still seeking to blend in Church Farm Reservoir - this contains the same issues that Littlehampton reuse scheme carries - the reservoir is not big enough to accommodate it.</p> <p>Moreover, if Church Farm was to be used by the Littlehampton scheme, it could not support a scheme at Horsham without being enlarged which we understand is not possible.</p> <p>We identified several options which were mutually exclusive with each other and so couldn't proceed. Some concerns remain around this (for example, use of both Horsham recycling and Littlehampton WTW</p>	<p>Southern Water needs to fully assess this option and provide detail as to whether the option includes blending of water in Church Farm Reservoir.</p> <p>This potentially poses serious and significant risks to the environment because of discharge in protected areas and requires further assessment before we can consider it as a feasible option.</p>	<p>Southern Water needs to revisit this option and consider our comments regarding the use of Church Farm Reservoir. If Littlehampton reuse does require use of Church Farm, it's likely this scheme is a will not be feasible and cannot proceed, unless the reservoir could be significantly increased in size.</p> <p>Southern Water needs to ensure in its final plan that options are mutually exclusive from each other e.g. Horsham and Littlehampton WTW recycling.</p>	<p>The Littlehampton WTW recycling scheme currently being developed for delivery in AMP8 proposes to use the Western Rother and not Church Farm Reservoir as the environmental buffer and therefore there is no conflict and the schemes are not mutually exclusive.</p> <p>The variant of the Littlehampton WTW recycling scheme that proposes using Church Farm Reservoir is mutually exclusive with the Horsham WTW recycling option.</p> <p>We have noted the comments on this option and will be taking them into consideration when we carry out the options appraisal process for WRMP29.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
	recycling if Church Farm is used).			
I2.1 Clear scope for the SEA	<p>Section 4.2.1. states that all of the topics required under the SEA Regulations will be scoped in, however, no justification has been given for this decision other than referencing the requirements of the SEA Regulations.</p> <p>There is also little explanation as to how the scoping consultation influenced the scope of the SEA.</p> <p>The Environmental Report does not explicitly indicate the temporal scope of the SEA, and therefore we cannot be confident that the full timeframe of the plan spanning 50 years has been assessed.</p> <p>The table in Section 5.3. presents the assessment findings for each of the Preferred Supply Options, however, there is no indication</p>	<p>Failure to fully identify all likely significant environmental effects of the plan, which would undermine the adequacy of the SEA Environmental Report, pose a potential risk to the environment if effects are not fully understood and make the adoption of the WRMP vulnerable to legal challenge.</p> <p>The absence of justification for scoping in topics and absence of timescales when assessing the effects may lead to lack of understanding.</p> <p>If the temporal scope of the SEA and WRMP do not match, this may mean that not all effects of the plan have been assessed. As a result, this may reduce the</p>	<p>The SEA assessment timescales should be changed to match that of the WRMP, and the assessment should consider the new temporal scope.</p> <p>Section 4.2. of the Environmental Report should provide further justification/commentary for the scoping in of all the topics from the assessment.</p>	<p>The scope of the SEA includes all topics identified by the SEA regulations (Schedule 2(6)) to ensure all likely significant effects have been identified, described and evaluated. The approach provides a comprehensive and inclusive approach to considering the effects of proposed options, aligned with WRSE requirements and consistent with government, regulator and sector guidance.</p> <p>Appendix B of the Environmental Report details the consultation responses and how they have been taken into account within the completion of the SEA and the presentation of its findings in the Environmental Report.</p> <p>Section 4.2.3 and Table 4.1 of the Environmental Report presents the information on the temporal scope of the SEA. It provides a temporal definition of the 'short,' 'medium' or 'long-term' effects required in order to meet the requirements of Schedule 2(6) of the SEA Regulations. This is then reflected in the individual option assessments and the consideration of construction and operational effects.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
	to the timeframe for each of the effects.	<p>effectiveness of the plan and pose a major risk to the environment. This is a highly significant compliance issue.</p> <p>The issues surrounding the absence of justification for scoping in topics and the timescales for effects are not a matter of compliance.</p>		

Reference	EA comment	EA position	EA recommendation	Southern Water response
I2.2. Potential measures to prevent, reduce and offset significant adverse effects (Lack enough mitigation and monitoring)	<p>Mitigation and monitoring have been addressed in the assessment however it is inconsistent and lacking focus or commitment in some areas.</p> <p>In the Section 5 assessments, mitigation has not been identified for all options resulting in significant effects. Mitigation measures to be taken forward as part of the option development and planning process to help avoid or address significant adverse effects have not been specified in Section 8.</p> <p>Significant residual effects remain in some cases without any further actions offered other than further investigation or monitoring. e.g. Lower Itchen Drought Order.</p> <p>No other mitigation measures are proposed other than monitoring for significant negative effects from some</p>	<p>The Environmental Report does not commit to reducing significant negative effects in all cases and does not demonstrate the extent to which the proposed mitigation measures will reduce any significant environmental effects.</p> <p>Without commitment to avoiding or addressing potential negative effects, or an understanding of the effectiveness of any mitigation measures in reducing effects there is the potential for implementation of the plan to give rise to significant adverse effects. This may lead to challenges about the adequacy of the SEA and significant legal challenge or compliance risks.</p>	<p>A summary of the key mitigation measures identified in sections 5, 6 and 7 and further project specific measures required to address significant effects identified by the assessment should be included in section 8. This should cover a broader range of measures than just construction and monitoring.</p> <p>The assessments should also include consideration of the impacts of mitigation and highlight any significant residual environmental effects that would be expected, if any, after the proposed mitigation is applied.</p>	<p>Section 5 of the Environmental Report presents the findings of the individual option assessments for the constrained and preferred options (summarised from Appendix G, H and I). Effects are considered during construction and operation and pre- and post-mitigation. These have then been summarised in Section 8 of the Environmental Report. This includes a full suite of construction mitigation measures and specific measures concerning biodiversity, scheme design, pollution prevention, air quality, population and human health, climate change, resource use, cultural heritage and landscape. They are considered to go significantly beyond monitoring measures. The individual option assessments present the post-mitigation effects, and in some instances indicate the potential for residual moderate or likely significant effects.</p> <p>The Lower Itchen Drought Order option assessment includes reference to more extensive mitigation against the biodiversity topic e.g. 'A Lower Itchen Drought Order Mitigation Package has been prepared consisting of a package of in-river restoration and mitigation measures for the Itchen, including a programme of measures aimed at increasing the resilience of the Itchen valley Southern damselfly population, and catchment-wide work, aimed at addressing wider catchment pressures so as to increase resilience to synergistic and compounding effects.'</p> <p>The Environmental Report for the revised dWRMP24 has been amended to reflect any additional suitable mitigation measures which have then been included within the individual option assessments and summarised in sections 5 and 8.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
	<p>proposed water resource management option e.g. predicted negative effects on European designated waterbodies.</p> <p>Opportunities for environmental enhancements or benefits at a project or operational level have not been identified.</p> <p>Limitations of the biodiversity mitigation has been recognised. Mitigation for pollution prevention is proposed, however, the report signposts best practice guidance rather than outlining a plan for more detailed work at the project level.</p> <p>There is no explanation to the extent of significant environmental effects after mitigation is applied and therefore the effectiveness of the mitigation measures to prevent, reduce and offset significant adverse effects cannot be determined.</p>			

Reference	EA comment	EA position	EA recommendation	Southern Water response
	Section 8 does not determine the extent to which significant residual environmental effects remain if the plan were to be implemented.			
12.3 In-combination and cumulative effects	Both inter and intra project effects have been identified for the options. However, the analysis is very high level. Potential cumulative effects with the Regional Plan are clearly identified, for other cases, the Environmental Report either concludes that cumulative effects would be unlikely (with limited reasoned	<p>Whilst efforts have been made to consider cumulative effects, the assessment of inter-project effects is limited, and the requirements of the regulations not fully met.</p> <p>Risk of challenge to the adoption of the WRMP if the SEA has failed to provide</p>	<p>Further explanation of the assessment methodology in Section 7 and an overview of the potential cumulative effects and proposed mitigation on a topic by topic basis.</p> <p>Efforts should be made to clearly identify and evaluate inter-cumulative effects, even if qualified by reasoned assumptions.</p>	<p>Section 4.4.2 sets out the approach to the assessment of secondary, cumulative and synergistic effects (consistent with Schedule 2 (6)) of the SEA regulations.</p> <p>Section 7 of the Environmental Report presents the findings of the assessment of cumulative effects (including secondary and synergistic effects) taking into accounts for both intra and inter plan and programme. In-combination effects with identified Nationally Significant Infrastructure Projects (NSIP)s are also considered.</p> <p>The cumulative effects arising from the WRMP24 are presented for both construction and operation and pre- and post-mitigation against all the SEA topics.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
	<p>justification) or acknowledges that it is not possible to be more definitive at this stage.</p> <p>The methodologies for the assessments haven't been clearly defined and not all significant residual effects from the options assessments in sections 5 and 6 have been identified in the cumulative effects assessment or the results from the HRA or WFD assessments. An overview of the potential effects on a topic by topic basis would have been more helpful including further details on the source of effects.</p> <p>Limited detail as to how cumulative effects with other relevant plans, programmes and projects have been assessed and limited justification to support the conclusions that cumulative effects are unlikely.</p>	<p>the information reasonably required and to identify, describe and evaluate likely significant environmental effects, including cumulative effects.</p>	<p>We would expect an overview of the potential effects on a topic by topic basis including further details on the source of effects.</p>	<p>Section 7 of the Environmental Report has been revised to take into account the need to summarise the inter-plan effects by SEA topics, noting that this remains a strategic level assessment, with a commensurate level of detail and justification provided.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
I2.4 How will monitoring be undertaken	<p>SEA monitoring indicators for the WRMP are outlined in Table 9-1. The table describes what the monitoring indicator is, what the impacted receptor is and where the information will be sourced from, however there is no indication about when the monitoring will take place and how.</p> <p>There is no information on trigger points and what action will be taken if unexpected significant effects are found during monitoring.</p> <p>The proposed monitoring does not clearly describe when the measures will be carried out, who by and how. There are no thresholds defined for remedial action in the event of unforeseen adverse effects arising.</p> <p>Monitoring of benefits delivered by the plan e.g. BNG or Natural Capital has not been addressed. There is no</p>	<p>Whilst some information on monitoring is provided, the Environmental Report fails to provide detail on all of the matters in Regulation 17, most notably about making provision for remedial action in the event of unforeseen circumstances.</p> <p>Risk of challenge/objection on SEA regulations compliance grounds and failure to give sufficient weight to the arrangements for monitoring, may result in unforeseen adverse effects continuing without appropriate remedial action.</p>	<p>Table 9-1 should be amended to include further details about when the measures will be carried out, by who and how.</p> <p>Further consideration should be given to measuring other objectives of the plan such as delivering BNG and improvements in ecosystem services. In particular, the Environmental Report should set out all of the information required by the regulations, including how any unforeseen adverse effects will be remedied, using specific and measurable indicators. Information should be provided about what actions should be taken if unexpected significant effects are found during monitoring.</p>	<p>SEA regulation 17 requires:</p> <ol style="list-style-type: none"> (1) The responsible authority shall monitor the significant environmental effects of the implementation of each plan or programme with the purpose of identifying unforeseen adverse effects at an early stage and being able to undertake appropriate remedial action. (2) The responsible authority's monitoring arrangements may comprise or include arrangements established otherwise than for the express purpose of complying with paragraph (1)'. <p>Section 9.3 of the Environmental Report reflects these requirements and notably takes into account the allowance of part (2) to ensure the monitoring measures proposed do not duplicate existing commitments. In consequence, the frequency of data collection is linked to existing monitoring programmes, with the data sources also reflective of the responsible body.</p> <p>Unforeseen adverse effects are by definition difficult to anticipate and in revising the section, such measures as proposed emphasise the importance of process, data sources and evidence thresholds as a precursor to any further actions.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
	plan for what will happen if unexpected significant effects are found during monitoring.			
I3.1 Augmentation scheme at Medway	<p>We are aware that during the sensitive summer months the Medway, suffers greatly from low flows and water quality issues. We also noted that the shift and reduction in the release operations from Bewl water will be extending the impacts throughout the catchment.</p> <p>Reduction in the important summer augmentation flows from Bewl reservoir to the River Bewl/Teise/Medway water bodies downstream, will be considered hydrological deterioration under WFD. Any planned changes in the current flow regime, even if they are artificially supported, will need to be fully assessed under WFD.</p>	This option could potentially pose some environmental risks and requires further assessments	<p>The EA would recommend a combined programme of works to include survey and desilting activities for Eccles Lake in order to increase Southern Water's holding capacity and resilience to outages and low flow events.</p> <p>This scheme will require sophisticated modelling to assess impacts which might not guarantee that the option is feasible.</p>	The comments are noted. We will take them into account as we move forward and will also liaise closely with South East Water.

Reference	EA comment	EA position	EA recommendation	Southern Water response
	<p>Assessment of upper catchment impacts and possible mitigation requirements to offset depleted river reaches – i.e. continued additional environmental releases from Bewl reservoir for downstream river benefits (Teise/Medway – not Bewl River, releases to be made via smallbridge pipeline) (in addition to statutory reservoir compensation flows).</p> <p>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.</p> <p>If the option to discharge to river is to be applied throughout extended dry periods to meet peak demand it would risk exacerbating existing and well documented issues within the lower</p>			

Reference	EA comment	EA position	EA recommendation	Southern Water response
	<p>Medway during the Summer.</p> <p>This is a shared option with South East Water. Option dossier does not align with that from South East Water, so two companies need to discuss further and share output from previous meetings. We would be more supportive of an offline scheme which discharges into Eccles Lake at Burham.</p> <p>Flow loss from estuary section of River Medway and water quality due to freshwater/saline water mixing zone needs to be considered.</p>			
14.1 Earlier delivery of desalination schemes in response to AMP8 and AMP9 plan delivery	We note that there are risks associated with supply and demand side action in first 10 years of plan. The desalination schemes are selected later in the planning period and therefore there may be scope for these to be brought forward if required.	Without appropriate assessments, it will be challenging to accelerate delivery of these schemes, should they be needed sooner than currently selected.	<p>The EA would expect the company to consider the risks posed by the current preferred supply and demand schemes in its plan up to 2035 and the potential role of its desalination schemes currently planned later in the planning period.</p> <p>The company consider bringing forward detailed</p>	<p>We have undertaken a review of desalination schemes in our dWRMP24, partly triggered by issues we have faced with the Sussex Coast desalination scheme. The review has concluded that a realistic earliest date for these options is 2037-38 in view of the considerable time required to investigate, plan and deliver such schemes.</p> <p>However, we will keep the timelines under review and will aim to move quicker where feasible.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
	Given the risks and uncertainty around the first 5-10 years of the plan delivery, we would strongly encourage Southern Water to complete the appropriate detailed design for these schemes earlier in the plan to mitigate this risk.		feasibility and environmental assessments of these schemes to AMP8 to enable these schemes to be deliverable should they be needed sooner than currently planned	
14.2 Isle of Sheppey desalination plant (up to 20MI/d) by 2049	<p>We understand the proposed site is on Lappel Bank. Although the land has been historically raised, there remains a flood risk to parts of the land, or the area surrounding, which will need to be factored into the consideration of the suitability of the site.</p> <p>Additional works would be needed at this location to adequately assess the flood risk over the lifetime of the development and mitigations to be proposed to minimise the risk and to demonstrate it is an acceptable location.</p>	The EA have concerns over suitability of the location for this option. Further assessments and evaluation of potential impacts and possible mitigations are required before we can consider this option as viable.	<p>The EA would expect full environmental assessment around this option, to ensure that the proposed location is suitable. Any flood implications as well as safety, and potential environmental risks and mitigations needs to be considered by Southern Water and be included for this option.</p> <p>We recommend contacting the EA's Medway Estuary and Swale Flood Alleviation Scheme project team to explore any future opportunities for collaboration.</p>	The comments are noted and we will take them into account when progressing with this option. We will also liaise with the Medway Estuary and Swale Flood Alleviation Scheme project team in this regard as recommended.

Reference	EA comment	EA position	EA recommendation	Southern Water response
14.3 Desalination on East Thanet coast and transfer to Fleete Manston (up to 40MI/d) by 2041	<p>It is unclear from the information provided where the plant would be located. It is presumed that it will be west of Birchington. Although there are flood alleviation measures along sections of this section of the coastline, without certainty of the site location, it is unclear whether this currently provide any benefit to the proposed option.</p> <p>Management of the Northern Sea Wall beach shingle is required periodically to benefit the area so there may be opportunities for collaboration with the EA</p>	The EA have concerns over suitability of the location for this option. Further assessments and evaluation of potential impacts and possible mitigations are required before we can consider this option as viable.	<p>The EA would expect full environmental assessment around this option, to ensure that the proposed location is suitable. Any flood implications as well as safety, and potential environmental risks and mitigations needs to be considered by Southern Water and be included for this option.</p> <p>We recommend contacting the EA's East Kent Partnerships and Strategic Overview team to explore any future opportunities for collaboration with the Northern Sea Wall flood alleviation works.</p>	The comments are noted and we will take them into account when progressing with this option. We will also liaise with the East Kent Partnerships and Strategic Overview team in this regard as recommended.
14.4 River Thames Desalination: Thames Estuary (up to 40MI/d) by 2040	It is unclear from the information provided where the plant would be located. Although Swanscombe Peninsula benefits from a level of flood alleviation from tidal flooding, there is no guarantee that the standard of flood protection provided	The EA have concerns over suitability of the location for this option.	The EA would expect full environmental assessment around this option, to ensure that the proposed location is suitable. Any flood implications as well as safety, and potential environmental risks and mitigations needs to be considered by Southern	The comments are noted and we will take them into account when progressing with this option. We will also liaise with the Partnerships and Strategic Overview team in this regard as recommended.

Reference	EA comment	EA position	EA recommendation	Southern Water response
	<p>today will remain into the future. Under Defra Flood Defence Grant in Aid funding rules, our Thames Estuary 2100 plan identifies that area remains underfunded to cover the costs of maintaining the standard of service provided currently.</p> <p>It will, therefore, be essential to work with key partners to identify what an acceptable level of risk into the future will be and require partnership funding and collaboration to deliver it.</p>		<p>Water and be included for this option.</p> <p>Southern Water requires to site and assess any hypersaline discharge and to ensure that it does not affect protected species particularly around Greenhithe area of the Thames.</p> <p>We recommend contacting the EA's Partnerships and Strategic Overview team to explore any future opportunities for collaboration with the Thames Estuary 2100 programme.</p> <p>The EA would expect Southern Water to undertake a flood risk assessment to demonstrate that the site can, in principle, be safely developed and operated over its lifetime for this purpose before we can consider this option as feasible.</p>	

Reference	EA comment	EA position	EA recommendation	Southern Water response
14.5 Tidal Arun Desalination (2062)	<p>Although this option is planned further in the future, there are some serious environmental concerns which need to be considered and addressed by Southern Water.</p> <p>We and Natural Enland have some concerns if this option is going to be selected as part of your alternative option to replace Sussex Coast. There are considerable amount of assessments that still need to be undertaken for this option.</p>	Potential risk to the environment	Significant further assessment is required to understand the viability of this option.	<p>As mentioned earlier, our current earliest delivery estimate for desalination schemes is 2037-38. This option is therefore currently not a like-for-like replacement for the Sussex Coast desalination option. However, it might be brought forward in the revised dWRMP24. If this is the case, we will ensure the delivery date allows sufficient time for further assessment.</p> <p>We will engage with the EA and Natural England when we start progressing work on this option.</p>
15.1 Supply forecast and DO in baseline	Whilst the company has listed the DO for each of its sources, it has not provided a breakdown of each source in its supply forecast, so we are unable to see what is driving any increases/decreases in DO over time therefore at this stage, we cannot comment on whether the figures are correct.	Lack details in data provided	The EA would expect to see a clear breakdown of DOs in the supply baseline, which represent increased and/or decreased in DO over time.	<p>The water resource planning guidance requires us to use a system response DO. We calculated this and provided the data in our dWRMP24 for each of our WRZs using our system simulation models developed in Pywr.</p> <p>Although calculated, we did not report individual source level DOs in our dWRMP24. This was because, in many cases, sources are constrained by conjunctive use and network effects. Hence, the system response DO can differ greatly from the summation of DOs of individual sources.</p> <p>In our revised dWRMP24, we have provided a high-level breakdown of source level DOs where available. However, it should be noted that this is not possible in all cases. This is particularly the case for storage reservoir sites where the estimates of DO are intrinsically based on conjunctive use. For such sites, only the water resource planning system level</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
				DO responses are available. We have also provided a comparison of the WRMP19 DOs and the WRMP24 iterations, and where they differ, the reasons for that difference.
15.2 Explain and justify further why the MDO scenario used in WRMP19 is not required in the latest plan	<p>The company used to forecast for an MDO scenario as well as DYAA and DYCP. The company have said for this round they have not done this as they consider the system simulation approach they have adopted for this round, accounts for seasonal variability.</p> <p>Some commentary has been provided on this but further details on the techniques used and validation of these are required to fully understand the new approach.</p>	Lack explanation in information and data provided which might pose a risk to security of supply	We would expect further details and clear explanation on not using MDO in the main plan for clarity. Validation of these is required to fully understand the new approach.	<p>A Minimum Deployable Output (MDO) scenario considers the interplay between the water supply available in a drought at the seasonal minimum, i.e. when river flows or groundwater levels reach their annual minima. Typically for us this occurs in October before the start of the groundwater recharge season. The conditions that would justify use of an MDO scenario, specifically, reduced yield from surface and groundwater yields during periods of low flows or low groundwater levels, are not unique to Southern Water.</p> <p>In our previous plans, we considered MDO scenarios by examining available DO at annual minima of either river flows or groundwater levels. However, there are limitations to this approach:</p> <ul style="list-style-type: none"> • It assumes that sources within a WRZ will reach annual minimum yield at the same time. In reality, this may vary due to different flow rates or local aquifer characteristics and storage. • It takes no account of demand and the distribution of abstractions between sources. <p>Where there are significant seasonal variations in yield, we have adopted a system simulation method in order to better characterise system behaviour during drought. To inform this, we have used our time series modelling of source DO on a monthly or daily time step that captures seasonal groundwater and river flow variations. These variable yields are then available to be drawn upon by the system simulation model so that each source coherently responds to the drought conditions and local variations in both supply and demand are captured.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
				<p>A system failure is defined at the point in which demand cannot be met following the Scottish DO assessment method. For non-critical period scenarios, i.e. the standard WRSE DYAA assessment applied across the region, this failure point is free to occur at any point outside the critical period (i.e. it is not constrained to just examining the minimum as would a true MDO scenario). However, due to the fact that reductions in supply rather than changes in demand tend to drive supply-demand failures, the failure point for the DYAA scenario naturally tends to be associated with the supply minima, i.e. the MDO period.</p> <p>We have used our time series assessments of DO at individual groundwater sources to estimate an equivalent MDO to our WRMP19 assessments. While we could apply these in an additive way to estimate our MDO supply base, it would not fully capture system effects apparent in our Pywr models. In fact, our modelling of DYAA assessments using the same underlying data suggest that system constraints we have captured in our Pywr models can be more significant than DO variability (i.e. MDO vs DYAA DO). Furthermore, since no other WRSE company has estimated an MDO scenario, either for this plan or previous plans, it would not be possible for us to create a coherent strategy with the rest of WRSE for a specific MDO scenario.</p> <p>Over the four planning scenarios we have considered (normal year, 1-in-100 DYAA, 1-in-500 DYAA and 1-in-500 DYCP), we have combined 5 population growth, 29 climate change and 4 Environmental Destination scenarios together in differing combinations. This results in a total of 580 different potential future water requirements, covering the full range of challenges that we face. While these 580 futures are formed from different combinations of the individual scenarios, these individual combinations can give very similar results in terms of their supply-demand balance to other futures. These combinations of discrete forecasts describe the overall supply-demand balances. While each supply-demand balance is described by a different combination of discrete forecasts, many of the overall impacts are</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
				<p>remarkably similar. This means that there are several other combinations of forecasts that could produce a similar supply-demand balance to those described in the plan. Furthermore, the range of uncertainty we have explored through these scenarios is much greater than is likely to be the case between an MDO scenario and our baseline DYAA scenarios.</p> <p>Consequently, we believe that our adaptive Best Value Plan and least regret options are sufficiently robust in tackling future uncertainty that they would not provide a different overall strategy than if we had explicitly considered an MDO scenario.</p>
16.1 outage forecast	<p>We are also concern that not enough detail is provided on the outage forecast, and it is not clear how outage is estimated, so this limits our review. The EA would expect more data to be provided on the outage values for the last 5 years by site and also explanation on the choice of distribution, why the 95%ile was used through the whole planning period rather than lower %iles being used in later years. This is also conducted with headroom calculations which we require some clarifications.</p>	<p>Lack clarity and explanation on data and information presented</p>	<p>Southern Water should also provide more data on the outage values and methodology in the final plan, to make it clear how this is undertaken.</p>	<p>We have reviewed our outage forecast. We will provide greater details on our outage and Headroom forecasts in the revised dWRMP24.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
I6.2 High outage allowance in numbers of WRZ	We noticed high outage allowance in a few WRZs, which we require Southern Water to explain the causes and how it will be reduced e.g. in WRZs Kingsclere, Hampshire Rural, IoW, Sussex Worthing	Lack justification and explanation on high outage allowance	The EA would expect Southern Water to provide justification on high outage allowances on relevant zones and try to reduce this in the future.	<p>We reviewed our outage forecast and this resulted in outage increasing significantly in some WRZs (by 100% or more). As a result, we reverted to the previous values in such cases. We have additional investment in place in 2020-25 to reduce outage to target WRMP levels and remain on plan to deliver this.</p> <p>We have provided greater details on our outage and headroom forecasts in our revised dWRMP24.</p>
I7.1 Ensure consistency on the benefits from the Tunbridge Wells WTW conjunctive use option throughout the plan and liaise with South East Water	<p>There is an inconsistency between the narrative and the data tables regarding the DO benefit from this supply source.</p> <p>The nutrient loading of Bewl reservoir is a critical factor and any effluent from WTW would need to be as low or lower in nutrients than the Medway water abstraction that currently fills Bewl water during the winter abstraction period.</p> <p>There is a potential impact from reduced inflows to headwaters, but we would need more information, as the location of this option is not clear. There also may be some issues with</p>	<p>Lack clarity in data presented.</p> <p>This option could potentially pose some environmental risks, and requires further confirmation of the location and impact assessment of reduced inflows to headwaters and any mitigation measures if necessary.</p>	<p>Southern Water is expected to ensure there is a consistency in reported DO benefit from this source, between the narrative and data tables</p> <p>Southern Water should liaise with South East Water and understand if there would benefit from the option. If so, it should be included consistently between the two plans.</p> <p>Further assessment is required on the potential impacts from low flows and if there are impacts Southern Water needs to propose mitigation measures.</p>	<p>The data tables were correct and the DO benefit from the Tunbridge Wells WTW scheme is 3.6Ml/d. We will ensure this is consistently reported in our revised dWRMP24.</p> <p>The regional level supply-demand modelling considers potential for both existing and new transfers between companies, including any benefit from this scheme.</p> <p>We will need to undertake further detailed discussions as to the implications and benefits of this scheme in the context of our existing bulk supply arrangements with South East Water from the River Medway Scheme.</p> <p>This scheme is not selected until 2045 and we will undertake further environmental assessments of low flow impacts as part of the detailed design.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
	siltation that can significantly reduce flows, which need clarification by Southern Water. If there will be some impacts, we would expect Southern Water to propose mitigations including potential narrowing of watercourse and restoration works to channel.			
18.1 Report on the method the company has used to confirm it can meet its levels of service for level 1 to level 3 drought measure	The company has quantified the benefits of including levels of service of drought measure Levels 1-3 in its plan but has not outlined the approach it has adopted to show it can meet the frequency that the company has stated in its plan	If the frequency of Levels 1-3 drought measures has not been tested in a company's assessment it is possible that the customer may experiences drought measures more frequently than those agreed with the company	<p>The company should report on the method it has used to confirm that it can comply with the more frequent drought measures (L1-L3).</p> <p>The company should justify any significant reduction in DO as a consequence of including the frequency as a constraint or outline how it intends to minimise the reduction.</p>	<p>Our drought triggers, as set in both our published Drought Plan 2019 and our revised draft Drought Plan 2022, are designed to provide implantation triggers consistent with our stated levels of service (i.e. 1-in-10 year and 1-in-20 year for most demand side drought measures and 1-in-20 year application thresholds for most supply side drought permits and orders (excluding the River Test).</p> <p>We have used a consistent set of modelling (e.g. groundwater, hydrological and system simulation) to determine the DO benefits of each of our supply-side drought orders. This reflects the reduction in yield of some measures, for example the Candover Augmentation Scheme Drought Order under increasing drought severity. We have set out the variation in drought benefit DO in our revised dWRMP24.</p> <p>The supply-demand balance and investment modelling solves the supply-demand balance for normal year, 1-in-100 year, 1-in-200 year and 1-in-500 year scenarios simultaneously and therefore accounts for the variable yield of drought permits and orders.</p> <p>For TUBs and NEUBs, the investment modelling has assumed that these would be implemented throughout the planning period in line with our drought plan levels of service</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
				<p>(i.e. for all events more severe than 1-in-10 year or 1-in-20 year). Our default position is that this will remain the case unless there is feedback to change this policy position. A sensitivity run was carried out in the investment modelling at a regional level to exclude the effect of TUBs and NEUBs. This contained unresolved supply-demand deficits and was not reported directly in our dWRMP24.</p> <p>No benefits form either supply or demand drought measures are included in the normal year scenario.</p> <p>In our revised dWRMP24 have clearly set out the expected benefits of each of our drought measures at different return periods.</p>
19.1	The company has demonstrated that it has fully assessed vulnerability and considered all UKCP18 products as part of its climate change assessment, however the justification on which tier has been used is missing	Lack clarity in information provided	Southern Water should plainly state which tiers of analysis has been applied	<p>This was stated in dWRMP24 originally as 'Tier 3' but looks like at some point wording was changed to be '3-Tier' which has likely caused confusion.</p> <p>We followed a Tier 3 approach and have clarified this in the revised dWRMP24 narrative.</p>
19.2 Approaches to scaling impacts across time	<p>Southern Water use the EA scaling equation but do not plainly state which base year and year to scale back from are used. There is also no justification on this selection is provided.</p> <p>Methods are not fully transparent or fully justified.</p>	Lack detail in information provided	<p>Southern Water should plainly state which years are used in the scaling equation and provide explanation. Also, justifications around the methods used should be included.</p> <p>Southern Water should clearly communicate how climate change impacts have been assessed by</p>	<p>A consistent climate change scaling approach is adopted across all WRSE companies. We used spatially coherent projections for the 2060-2080 time slice from the UKCP18 data to derive our climate change perturbations. We chose this period of the UKCP18 forecasts because it is most closely aligned with the end of the planning period (2075). We therefore adopted 2070, the central point of this forecast period, as the scaling year in our climate change assessments. We have applied the standard linear scaling approach suggested by the WRPG to climate change in all our WRZs. The base year for this scaling was 1989-90.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
			<p>adaptive planning, and therefore how adaptive planning scenarios have impacted on reporting for climate change impacts, including scaling of impacts.</p>	<p>For our dWRMP24, we addressed climate change uncertainty by branching in 2040 between 'high', 'medium', and 'low' climate change scenarios. For the regional climate change assessment at the WRSE level, we selected replicates 6 and 7 as being representative of the upper and lower quartile impacts on DO from the 28 global and regional spatially coherent climate projections available under the RCP8.5 pathway from the UKCP18 dataset. Replicates 6 and 7 correspond to the HadGEM3-GC3.05-r001i1p01649 and HadGEM3-GC3.05-r001i1p01843 circulation model projections, respectively.</p> <p>Although these replicates were considered regionally appropriate when translated down to the WRZ level, the difference in both spatial impacts across the region (for example, Hampshire vs Kent) and the differing hydrological characteristics of different WRZs (e.g. groundwater vs surface water) mean that this assertion does not necessarily apply at a company or WRZ level. For example, in some of our WRZs, the 'low' impact replicate (No. 7) is actually nearly as severe as the 'high' replicate (no. 6) and both are worse than the median.</p> <p>We have agreed, at a regional level, that we will develop an alternative suite of sensitivity assessments based on the true upper and lower quartile impacts at a WRZ for our revised dWRMP24. This will better reflect the true upper and lower quartile range of climate change impacts across the 28 RCP8.5 scenarios that we have investigated.</p>

Reference	EA comment	EA position	EA recommendation	Southern Water response
I9.3 climate change uncertainty	The company has demonstrated that it has fully considered climate change uncertainty. However, information on methods could be more transparent and accessible by summarising Regional Plan methods in the revised dWRMP24, also justification of product selection is not included.	Lack explanation on the methods used and selection of products	Southern Water should explain how they account for the selection of a severe climate scenario for integration within results.	<p>Assessments at both a regional and company level have shown that the range of climate change uncertainty within the 28 spatially coherent RCM and GCM scenarios we have explored under the RCP8.5 emissions scenario across WRSE encompass the range of projections and uncertainty from other lower emission scenarios.</p> <p>We have not used the probabilistic forecasts as we required spatially coherent projections across the WRSE region to generate coherent supply-demand balance forecasts. At the time of undertaking our supply forecast modelling for dWRMP24, the spatially coherent projections based on global model forecasts for the lower emissions scenario (RCP2.6) were not available. Hence, we used a climate change scenario that was based on a low percentile under RCP8.5 which is similar to RCP2.6 50th percentile.</p>
I10.1 Baseline DO in data tables	The water company has presented a variable baseline DO in its data tables up to 2040, and appears to have adjusted baseline DO according to reduced levels of service provided in that year up until 2040. This is in conflict with the WRPG and table instructions, which requires baseline DO before reductions (6BL) to present 1-in-500 year supply resilience across the planning horizon. DO as presented in its current form does not result in an incorrect supply demand	Lack clarity in information provided	<p>Ensure that baseline DO (6BL) is presented to reflect 1-in-500 year supply resilience from the first to the last year of the planning horizon.</p> <p>Reductions to levels of service before 2040 should be presented as an option, with the DO benefit of a level of service reduction set out in 6.3FP in Table 3b (and Table 3e where relevant for DYCP). This option must also be set out in Table 4 (option appraisal table) and Table 5 (preferred option benefits table). You should make it clear that the option description reflects the</p>	This is a result of the way investment modelling methodology agreed with WRSE works. At this stage there is insufficient time to re-engineer the investment modelling or develop equivalent Best Value options that could be provided to the investment model to represent reductions in short to medium level of service from current baselines (less than 1-in-500 year) up to the 1-in-500 year standard. For our revised dWRMP24, we have therefore maintained the existing investment model methodology but in post processing have recalculated and adjusted baseline DO to show the 1-in-500 year value and, as appropriate, any reductions below this level of service as options in our data tables.

Reference	EA comment	EA position	EA recommendation	Southern Water response
	balance, but does cause option benefits to be inaccurate.		WAFU benefits from a defined lower level of service such as 1-in-200 up to the point at which you move to 1-in-500. Your final planning Table 3c will then be automatically calculated to reflect the benefits from your reduced levels of service alongside your other options. The benefit of levels of service reduction in Table 5 must match the value presented in Table 3b in 6.3FP as both are DYAA tables.	

Reference	EA comment	EA position	EA recommendation	Southern Water response
111.1 Review resilience in the context of the 2022 drought	The drought of 2022 challenged most companies and was one of the most significant droughts of recent times. The drought saw very high demands and highlighted some areas where resilience needs to be improved.	Being resilient to droughts is a key objective for the WRMP.	<p>The company should clearly show in its revised dWRMP24 how it has learned from the conditions experienced in 2022. This includes:</p> <ul style="list-style-type: none"> • how the company can improve resilience • temporary new schemes that could be permanent • newly identified drought options • assumed benefits reflect latest understanding levels of service • updating DO where understanding improved around source responses to drought • dead/emergency storage assumptions • accurate demand forecast assumptions including extent/duration of peak demands • need for critical period planning • schemes to improve connectivity and WRZ integrity • investment to remove infrastructural/operational constraints • bulk supply agreements and pain share 	We have included a lessons learned review from the 2022 drought as a separate section in our revised dWRMP24.

Reference	EA comment	EA position	EA recommendation	Southern Water response
			<ul style="list-style-type: none">• appropriateness of outage forecast	

2. Feedback by Natural England and our responses

Reference	Natural England comment	Southern Water Response
Summary	<p>Summary of Natural England’s comments In our review of Southern Water’s dWRMP, Natural England has considered how the company has addressed its environmental obligations as set out in The Water Industry Strategic Environmental Requirements (WISER) and how the dWRMP supports the ambitions in Government’s recently published Environmental Improvement Plan (previously the 25 Year Plan) to improve the environment.</p> <p>Natural England are minded to object to Southern Water’s dWRMP if it is not improved in line with our representation before it is published. As submitted, we consider there is insufficient information within the Habitats Regulation Assessment (HRA) and Strategic Environmental Assessment (SEA) of the potential environmental risks associated with the WRMP. Most critically: The dWRMP is unable to remove an adverse effect on integrity of the River Itchen Special Area of Conservation (SAC) and avoid potential adverse effects to other Habitats sites, as summarised below and detailed further in Annex 1 of this response. Selected options are hindering the conservation objectives of protected sites including Sites of Special Scientific Interest (SSSIs) and Marine Conservation Zones (MCZs).</p> <p>Further details are provided in Annex 1 of this letter and the critical issues that require addressing are summarised below:</p>	<p>We have noted the feedback by Natural England. We have incorporated them in our revised dWRMP24. Responses to each are provided separately below.</p>

Reference	Natural England comment	Southern Water Response
Summary	An assessment must be included in the HRA of the existing adverse effects on the River Itchen SAC and the Arun Valley SAC, Special Protection Area (SPA) and Ramsar site caused by abstraction under current groundwater licences, and the contribution these abstractions may play in preventing the site from achieving its conservation objectives.	<p>Current abstraction licenses are assessed as part of the WINEP process, not the WRMP. Annex 9 of the revised dWRMP24 explains the current consenting regime and refers to the ongoing WINEP investigations and the Pulborough sustainability investigation.</p> <p>We have recognised a range of potential outcomes from WINEP through the uncertain sustainability reductions including in our Environmental Destination scenarios. This specifically recognises the potential impacts of the Itchen and Pulborough abstractions on designated sites. For the River Itchen licence and Pulborough groundwater licence we have undertaken additional sensitivity testing to understand the implications of potential earlier licence reductions</p> <p>In the case of Pulborough, adverse effects have been established through the precautionary principle but are not yet supported by field observations.</p> <p>We expect that the WINEP and sustainability investigations and options appraisal will resolve this uncertainty of impacts and the timing and magnitude of any licence changes required. This is further discussed in Annex 9 of the revised dWRMP24.</p>
Summary	This dWRMP and HRA must include all options required to address current and/or potential water deficits that the company may have as a result of potential impacts to protected sites. Most concerning, there are several existing supply options (abstractions) this applies to which are undergoing current investigations and may conclude adverse effects on the following Habitats sites; North Kent Marshes (Medway Estuary, The Swale and Thames Estuary and Marshes), the Rivers Test and Itchen, and the Arun Valley.	<p>Current abstraction licenses are assessed as part of WINEP, not the WRMP. Annex 9 of the revised dWRMP24 explains the current consenting regime and refers to the ongoing WINEP investigations and the Pulborough sustainability investigation.</p> <p>We have recognised a range of potential outcomes from the WINEP through the uncertain sustainability reductions included in our Environmental Destination scenarios. This specifically recognises the potential impacts of our abstraction on designated sites and the options included to mitigate any supply deficits arising from licence changes are selected through our adaptive plan.</p> <p>We expect that the WINEP investigations and options appraisal will resolve this uncertainty of impacts and the timing and magnitude of any licence changes required. We also discuss this work further in annex 9 of the revised dWRMP24.</p>

Reference	Natural England comment	Southern Water Response
Summary	For supply options proposed earlier in the WRMP timeline, full environmental assessment must be included and/or completed within this dWRMP, this is a concern as many of these options have the potential for significant impact to designated sites.	Natural England has, following further separate engagement, provided supplementary advice on the term 'full environmental assessment' and its application to the WRMP24 and specifically water resource options to be implemented before 2035. It was agreed that the term was intended to cover the full range of environmental assessments being undertaken of Southern Water's WRMP24 e.g. SEA, HRA, WFD, BNG and NCA rather than reflecting updates expected to one specific assessment (such as the HRA, or a new assessment) as well as those existing investigations covered by the WINEP. Annex 9 of the revised dWRMP24 has been updated to include information from existing or planned investigations to address the removal of known or potential adverse effects.
Summary	The HRA and SEA must have a more detailed in-combination assessment for the options in the dWRMP. In Natural England's view it is unclear how options have been deemed not to have an in-combination/ cumulative impact by the company and the Water Resources South East (WRSE) Regional Plan.	The revised HRA and SEA assessments of the revised dWRMP24 have been refined to address the comment for further detail on the in combination assessment of effects. When undertaking the amendments, due regard has been given to the consideration of effects with other water company proposals (where published) and WRSE Regional Plan expectations. Section 7 of the SEA presents the findings of the assessment of cumulative effects (including secondary and synergistic effects) taking into accounts for both intra and inter plan and programme. The cumulative effects arising from the WRMP24 are presented for both construction and operation and pre- and post-mitigation against all the SEA topics. This has identified cumulative effects of the dWRMP24 in conjunction with the draft Regional Plan. This has been reviewed to ensure appropriate identification, description and assessment of likely significant cumulative, secondary and synergistic effects.
Summary	There is insufficient detail and evidence within (and in some cases inconsistencies between) the SEA and the appendices, for example to exclude likely significant effect and/or adverse effects on designated sites, MCZs, protected landscapes and/or habitats and species of principal importance for the conservation of biodiversity. These potential impacts on important environmental receptors have not all been adequately assessed and where applicable, sufficiently mitigated.	The Environmental Report of the revised dWRMP24 has been amended to ensure the consistent treatment of designated conservation and landscape sites and features within the SEA of the revised preferred options. This includes SSSIs, SSSI risk zones, MCZs, NNRs, Ancient Woodlands, National parks and AONBs, and supplements the range of features already considered when identifying, describing and evaluating the likely significant effects of the WRMP24.
Summary	Natural England commends Southern Water for the catchment measures being implemented such as those through the Catchment First programme which will lead to greater environmental resilience and biodiversity improvements.	The comment is noted.

Reference	Natural England comment	Southern Water Response
Summary	A Biodiversity Net Gain (BNG) and Natural Capital Assessment (NCA) does not appear to have been undertaken for this plan, the plan does refer to the WRSE methodologies for these assessments.	
Summary	Natural England strongly encourages Southern Water to retain and continue to work towards the target of 100l/d per person instead of the alternative target proposed of 109l/d. This was a flagship initiative of Southern Water's WRMP19 and shows great environmental ambition.	We are aiming to achieve a PCC of 110l/h/d by 2045 under dry year conditions. This equates to a PCC of 100l/h/d by 2045 under normal year conditions. We are also testing a more ambitious scenario achieving a PCC of 98l/h/d by 2045 under dry year conditions.
Summary	It has been challenging to review the dWRMP due to inconsistencies and lack of information, such as on certain options and their associated environmental assessment. There is also conflicting information and/or misalignment of information between Southern Water's plan and documentation in other WRMPs and the WRSE Regional Plan.	<p>The Regional Plan and individual companies' WRMPs are based on a single set of input/output data. As such the Regional Plan and individual company WRMPs should be consistent. The narrative around the plan may have caused confusion in some instances but it is difficult to provide an explanation without any specific examples.</p> <p>We will work with WRSE to ensure consistency in documentation of the two plans.</p>
Annex 1		
1.1: Habitats Regulations Assessment		
NE1	<p>Critical amendments required to the HRA</p> <p>The dWRMP should include options to address potential water deficits that the company may have as a result of current investigations, which could result in a licence change such as those through the WINEP. This includes but is not limited to investigations on the following Habitats sites; Arun Valley SAC/SPA/Ramsar site and the River Itchen SAC (Totford). These options must be appropriately assessed throughout the WRMP including the HRA and SEA).</p> <p>In Natural England's view the consultation document of Southern Water's dWRMP must be amended to meet the company's obligations in so far as they are relevant to the supply-demand balance set out in the dWRMP. The amendments must include:</p> <p>The full assessment of the existing adverse effects on the Arun Valley SAC/SPA/Ramsar site and the River</p>	<p>Our Environmental Ambition, as set out in our dWRMP24 (Annex 9) explicitly considers a range the potential supply deficits that could arise from reductions associated with the ongoing WINEP and sustainability investigations for the Itchen SAC. Specifically these include:</p> <ul style="list-style-type: none"> • Cessation of the use of the Totford (Alresford) licence that impacts the Itchen SAC from 2030 under all environmental destination scenarios. • A range of potential licence reductions for Pulborough groundwater source. <p>We recognise the potential uncertainty in both the magnitude and timing of these licence changes pending the outcome of the sustainability investigations and our scenarios cover a range of plausible reductions up to and included full revocation of the licence.</p> <p>We have provided improved narrative to our Environmental Ambition in our revised dWRMP24 to more clearly illustrate these points and have proposed a series of further sensitivity assessments of the strategy to understand further alternatives and the impact of timing of licence change.</p>

Reference	Natural England comment	Southern Water Response
	<p>Itchen SAC (Totford) caused by abstraction under current licences, and the contribution these abstractions may play in preventing the site from achieving its conservation objectives. In the case of the Arun Valley Habitats sites this must include the current interim legal mitigation requirements agreed to in relation to the existing adverse effects.</p>	
NE2	<p>Natural England acknowledges the work on the Arun Valley Habitats sites and the River Itchen SAC (Totford) is ongoing, in that there is:</p> <p>The WINEP investigation currently being undertaken on the Candover stream (River Itchen SAC) for the Totford source which will inform future options to avoid the adverse effect. Southern Water has an ambition to take this source offline by 2030. It is noted through discussions with the company that this has been considered in the supply demand balance, but this is not clear in the HRA or wider information in this Draft Plan.</p> <p>Southern Water’s sustainability investigation; Pulborough Basin Environmental Study (PBES) is currently being undertaken on the Arun Valley Habitats sites which will be completed in 2025. The outcome of this investigation will inform which of the alternative options are required to avoid the adverse effect. Whilst there have been discussions outside of this plan regarding licence changes and alternative solutions, there is considerable uncertainty on deliverability particularly to the necessary timelines. This has not been clarified in the HRA, or wider information in this Draft Plan.</p>	<p>The strategy regarding our Alresford source and the Itchen SAC is set out in Annex 9 of the revised dWRMP24.</p> <p>As above, and consistent with the emerging outcome of the WINEP, we are assuming that this source will cease to operate and its licence be revoked from 2030 under all our Environmental Destination scenarios and hence is it explicitly represented in our Adaptive Plan.</p> <p>The cessation of Alresford from 2030 is unaffected by the delayed delivery of the HWTWRP.</p> <p>Pulborough is covered in our response to comment above (NE1).</p>
NE3	<p>The following is not demonstrated in the appropriate sections of the HRA, which must be updated within this dWRMP:</p>	<p>The WRMP24 demand forecast takes account of growth forecast based on Local Area Plans, as well as other growth projections (e.g. by ONS). ‘In combination’ effects on water resources with respect to land-use plans and specific options are therefore inherently considered and accounted for as part of the WRMP option</p>

Reference	Natural England comment	Southern Water Response
	<p>An assessment of the effect of the increase in demand for abstraction that is likely to arise from growth, including new development. In relation to the Arun Valley designated sites this must also consider the company's obligations under Water Neutrality within the Sussex North WRZ.</p> <p>A description of the options, which could include water efficiency in new and existing development, to enable reduction of recent actual abstraction, as far as this is possible, so that the existing adverse effects are minimised or potentially removed before long-term additional supply provision. As detailed above, in relation to the Arun Valley Habitats sites this should reflect how Southern Water is achieving both the required targets outstanding from their previous WRMP 2019 and their obligations under Water Neutrality.</p> <p>An assessment of how far options for water efficiency or other measures can be implemented to remove the adverse effect in time to meet the objectives for nature recovery in the Environment Act and 25 Year Environment Plan, set out in Annex 2. This should take account of the obligations for species abundance from the Environment Act (also set out in Annex 2). Water companies should check and work towards targets in place under the Government's Environmental Improvement Plan, now published under the Environment Act 2021.</p> <p>An explanation of the measures that will be put in place to compensate for existing adverse effects, if there are no alternatives to continuing recent actual abstractions and adverse effects cannot be removed or mitigated (only applicable to the River Itchen SAC with Totford abstraction).</p>	<p>development process (i.e. an option that does not account for local growth is not a solution) and this has been relied on by the HRA.</p> <p>Demand side options including water efficiency have been identified, described and considered in the HRA of the revised dWRMP24. In addition, in our revised dWRMP24 describes our plan to increase water efficiency across the region in line with the Government's EIP.</p> <p>Further information, reflecting revisions to proposed options has been used to update the HRA appropriate assessment, supported by suitable cross referencing to the revised Annex 9 in our revised dWRMP24.</p>

Reference	Natural England comment	Southern Water Response
NE4	<p>Some examples of what could be explored with the above assessments are:</p> <p>providing support for water efficient new build local plan policies for both household and non-household in the WRMP, which should include sufficient company resource to support planning authorities and developers to seek the tightest achievable water efficiency measures. Consideration should be given to measures such as greywater recycling and rainwater harvesting in new builds as well as efficient fixtures and fittings; including provision for the water company to offset any increase in the relevant abstraction from the new development by mechanisms to reduce existing water consumption in the relevant area, thereby preventing an increase in the existing adverse effect; in some cases, compensation may be required in addition to a) and b) for the existing adverse effect.</p>	<p>This is covered in our response to NE3. Annexes 14 and 15 to the dWRMP24 described options including rainwater and grey water harvesting.</p>

Reference	Natural England comment	Southern Water Response
NE5	<p>The HRA must include all options required to address current and/or potential water deficits that the company may have that impact designated sites. The HRA must include assessment of existing supply options, such as current licensed abstractions, where there has now been a material change (since the last HRA of that licence and/or the last dWRMP) but essentially those that are currently undergoing investigation to understand with certainty whether there are adverse effects to particular designated sites. This includes but is not limited to WINEP investigations on the North Kent Marshes (Medway Estuary Habitats sites, The Swale Habitats Sites and Thames Estuary and Marshes Habitats sites), the River Itchen SAC, and other water resource focused investigations such as in the Arun Valley (and the subsequent Habitats sites in this catchment as mentioned above). These options must be appropriately assessed in the HRA but also throughout the WRMP including the SEA. Many of the options which Natural England would expect to see included, are outlined in table 3.1 of Annex 9 (page 17), however these should be incorporated into the HRA and main document of the WRMP where appropriate.</p>	<p>For existing abstraction licences and their consideration in WRMPs, these requirements are met through the licence review arrangements and protocols that are implemented at the start of each WRMP cycle, which also take account of WINEP. This review process (and WINEP) is undertaken in conjunction with Natural England, which identifies protected sites (including European sites) to the EA where it believes abstraction-related issues are affecting the achievement of favourable conservation status.</p> <p>This review is important to the development of the supply forecast at the start of the WRMP process and is consequently reflected in Section 5.4 ('Developing Your Supply Forecast') of the WRPG which outlines the requirements for sustainable abstraction taking into account existing statutory requirements and environmental destination. Any required licence amendments are factored into the supply-deficit calculations, and the EA will have confirmed that those licences that are considered valid for the planning period when the WRMP modelling is undertaken.</p> <p>The supply forecast informs the supply-demand balance calculations for the planning period, which is in effect the 'predicted future baseline' for water resources in a supply area. The water company then develops 'options' for resolving any predicted deficits in the supply-demand balance, which are then tested against various metrics to determine the 'preferred plan'.</p> <p>Consideration of the existing consenting regime in relation to European sites is noted in the WRPG solely in relation to the development of the supply forecast (Section 5.4), and not in sections of the guidance that explicitly consider the application of HRA to the WRMP; and whilst the WRPG refers to 'Your plan, including any options within it...' in relation to the Habitats Regulations, all references to HRA (as both a process and legislative test) are explicitly and/or implicitly linked to the options* identified by the WRMP. Consequently, the WRMP HRA addresses Regulation 63 of the Habitats Regulations and necessarily focuses on the assessment of the additional effects that the WRMP introduces over the predicted future baseline (i.e. the supply forecast determined at the start of the WRMP process that takes account of the agreed sustainability reductions and any that are reasonably anticipated).</p> <p>Therefore, the HRA of the WRMP is necessarily a forward looking assessment of the specific options (feasible and preferred) proposed by the WRMP to resolve deficits; it does not (and cannot) re-litigate the existing licences agreed for the planning period (and hence the WRMP supply-demand baseline) since there has to be a starting point/basis for the WRMP (i.e. the modelling/optionseering process</p>

Reference	Natural England comment	Southern Water Response
		<p>cannot start with the assumption that no current consents are reliable; and the HRA of the WRMP does not and cannot determine the licensing baseline from which the supply-demand balance is calculated).</p> <p>*Note that all references to WRMP 'options' in the WRPG are made in the commonly accepted sense, i.e. explicit interventions proposed by the WRMP to increase water supply or reduce consumption (e.g. Section 1.1), not a broad 'catch all' for ongoing water company operations such as those existing abstractions that will form part of the 'predicted future baseline'.</p>

Reference	Natural England comment	Southern Water Response
NE6	The time-limited licences outlined in Section 3.3, the investigations in Table 3.4 and Section 3.5 of Annex 9 (in terms of the confirmed licence changes required). These changes must be reflected in the in the HRA (and SEA) assessment, to ensure DO can be maintained should it not be possible to renew those licences or subsequent investigations show licence changes are needed (as alluded to in this section) by the company. Alternative supply options must be identified where investigations are in progress in case this results in certainty of an adverse effect on integrity.	Annex 9 of the revised dWRMP24 has been updated to include information from existing or planned investigations to address the removal of known or potential adverse effects.
NE7	Details in Annex 9 in relation to the issue raised in the last two paragraphs are inconsistent and confusing and requires clarification. For example, there appears to be two tables both captioned as Table 3.1 (on page 21), the information in these tables outlines the projected impacts of licence capping on DO, however, those options to address deficit need to be clearly assessed in the HRA and main document of the WRMP	Annex 9 of the revised dWRMP24 has been updated to include information from existing or planned investigations to address the removal of known or potential adverse effects.
NE8	Southern Water must ensure that all options within its WRMP have been assessed fully within the HRA. For a number of options, Natural England considers that insufficient evidence has been provided to rule out an adverse effect on integrity with sufficient certainty, or the HRA acknowledges that there is insufficient evidence at this stage. Where an option cannot rule out an adverse effect on integrity, alternative options should be presented which can satisfy the supply-demand deficit if these options are not feasible. For options that are planned for earlier in the timeline (prior to 2035, based on legislative targets in Annex 2) these must be assessed in this dWRMP. This should be clearly demonstrated in the HRA. Natural England acknowledges that some uncertainties for options beyond 2035 cannot be addressed fully for all options at this stage. It is expected Southern Water resolve these uncertainties well in advance of the proposed	The revised HRA of the revised dWRMP24 has considered the effects of the revised preferred option suite (both individually, and where appropriate, in combination). The assessment has been amended to address the additional request for details of options implemented before 2035, and draws on as appropriate, information from the revised Annex 9. Options to be implemented after 2035, where uncertainties remain, will be subject to further review and refinement (if they are to be retained) in future planning cycles.

Reference	Natural England comment	Southern Water Response
	<p>delivery timeline. Natural England advise that this is reflected in the environmental assessments and preferably includes a timeline of how this will be achieved as soon as practicably possible. Please refer to Annex 2 for further details of what is expected for a 'down the line assessment'</p>	
NE9	<p>In relation to the above issue, Natural England has found it difficult to review options and determine whether assessment has been completed appropriately both at the screening and appropriate assessment stages. For example:</p> <p>The list of options screened into the HRA seem to differ from those in the technical report. In some cases, these could be the same options, but different DO volumes are referred to. For example, in the technical report (Table 7.3 page 152 and 153) the Hastings water recycling option is referred to as a 15MI/d option, but the option screened in the HRA is 9.5MI/d. It is also unclear if this is the same option as the option name is different. This option also appears in the SEA as 10MI/d and not 9.5MI/d. No other options involving Hastings were screened in the HRA</p>	<p>The revised HRA, WFD and SEA assessments of the revised dWRMP24 have been refined to ensure consistency.</p>
NE10	<p>Different names are also used for several options. The names should be checked and consistent, so they match in both documents. Any options identified during this process which were not screened in the HRA should be added.</p> <p>In some instances, the Newchurch LGS option is referred to as 4.5MI/d, and elsewhere it is 1.9MI/d.</p> <p>The list of sites which appear in the stage 1 screening and then at stage 2 are different, e.g., Culham (Thames to Southern Transfer) does not appear in the stage 1 screening table (despite it stating this is necessary in Fable 0.2 on page 133), but then does</p>	<p>These inconsistencies relate to our SEMD naming of both existing sources and new supply options. We will ensure that all sources and options are consistently referred to by their SEMD name in our revised dWRMP24.</p> <p>This relates to the total output of the source (4.35MI/d) which is a combination of existing baseline DO (2.4MI/d) and the additional benefit (1.95MI/d) of the source rehabilitation scheme. We will ensure these are referred to consistently in the revised dWRMP24 documentation.</p> <p>Comment noted. The revised HRA of the revised dWRMP24 have been refined to address the request for consistency.</p>

Reference	Natural England comment	Southern Water Response
	<p>appear in the stage 2 summary table on page 144. The list of sites should be checked to ensure they match and are all assessed where appropriate.</p>	
	<p>The Thames to Southern Transfer has limited mention within the WRMP. It is unclear if this is because it is deemed to be covered by the Thames Water WRMP, or whether this is an omission. It should be included in Southern Water's WRMP and screened appropriately in the HRA (or if this has been completed by Thames Water, a summary of their conclusions presented).</p>	<p>We have included more detail around the Thames to Southern Transfer (T2ST) in our revised dWRMP24. HRA and other environmental assessments were carried out for the preferred T2ST options at Gate 2 of the RAPID process.</p>
	<p>It is understood why some options which have been screened out at stage 1 are only presented in the full screening in Appendix D but for clarity and transparency all options screened should be presented in the main HRA report.</p>	<p>We have reviewed this; however, given that the HRA applies to the plan as presented, and focuses on the effects of the (revised) preferred options, the additional value of including the detail of the options to be screened out in the main body of the HRA report, as opposed to leaving them included in a separate and referenced has been considered, and on balance has not been actioned as it does not improve the transparency or clarity of the revised HRA report.</p>
	<p>There seems to be no logical order for the options screened in the HRA stage 1 screening, the screening should be split into the three supply areas to make it easier to follow</p>	<p>The revised HRA of the revised dWRMP24 has been refined to address this comment.</p>
	<p>A consistent approach should be taken with regards to screening of the drought options. It is unclear why some have been screened, whilst others have not e.g., the Candover Augmentation Drought Order has been screened but it appears that the Lower Itchen Drought Order has not. Another example in relation to drought orders, is that it is unclear how the Candover Drought Order has been deemed to have no adverse effect on integrity of the River Itchen SAC. This option had been progressed to the Imperative Reasons of Overriding Public Interest (IROPI) and compensatory habitat stages in the Drought Plan HRA due to impacts to the River Itchen SAC. This needs to be acknowledged in the HRA. Drought options must be included and assessed appropriately</p>	<p>The revised HRA of the revised dWRMP24 has been refined to address this comment, consistent with the most recent information from the drought permit / order level assessments.</p>

Reference	Natural England comment	Southern Water Response
	<p>It is unclear if the Lower Itchen Drought Order has been screened in the HRA, but Table 2.3 implies it will be needed. This option is of concern as it also was assessed to the IROPI and compensatory measures stage in the Drought Plan HRA where adverse effects on the River Itchen SAC could not be ruled out. This information needs to be reflected in the HRA if appropriate.</p>	<p>The HRA will reflect the conclusion drawn in forming the Section 20 Agreement</p>
	<p>The HRA screening does not take account of the brine discharge for water recycling and desalination options in all cases. For example, a Likely Significant Effect (LSE) on the Solent Habitats sites from the Sandown water recycling plant has been screened out, yet modelling of the brine discharge has not been undertaken to date, so an impact cannot be ruled out with any certainty. Natural England therefore advises that LSE cannot be screened out at this stage.</p>	<p>These schemes are WRMP19 schemes that are included for completeness in WRMP24 and for which the environmental assessments are currently being undertaken. The HRA will not be able to bring additional analysis over that already being prepared for a scheme-level HRA.</p> <p>The reference to 'brine' has been clarified in discussion with Natural England and it has been confirmed that the term should only apply to effluent discharges of the desalination options and not water recycling options.</p>
	<p>It is unclear why the following options have been grouped together on page 144 of the HRA, and why the 'European sites screened-in' column for these sites is blank: HWZ to Otterbourne (120) Potable – Construction HWZ to Otterbourne (50) Potable – Construction Culham (120) - potable – Construction Culham (50) - potable - Construction.</p>	<p>See HRA, para. 2.2.11 - these are all essentially components of the same scheme. The revised HRA of the revised dWRMP24 has been refined to address this comment</p>
	<p>In the Appendix D screening documents, some of the screening tables for the Recharge of Havant Thicket reservoir from Budds Farm option are blank (page 40, 41 and 42), this should be updated to include the full details. The same applies for the Gravesend recommissioning option on page 92 of Appendix D.</p>	<p>The revised HRA of the revised dWRMP24 has been refined to address this comment.</p>
	<p>Limited details have been provided in the main HRA document for the Gravesend source as it has been screened out at stage 1 (Appendix D, page 92). Please can further details be provided on where this option is located, as sites near Pevensy have been screened in the HRA, but the name would suggest a</p>	<p>The revised HRA of the revised dWRMP24 has been refined to address this comment.</p>

Reference	Natural England comment	Southern Water Response
	<p>site in Kent. Further clarity is needed and the HRA should be updated accordingly if necessary.</p>	
	<p>The following scheme: Import: South East Water Kingston to KTZ Near Canterbury (2MI/d) appears to be screened twice in Appendix D. Please note this is screened under the alternative name for this option each time as referred to above. The naming of this option and the conclusions drawn in the HRA must match those in South East Water's WRMP. The same applies for the option South East Water – SW – Tilmore to Pulborough.</p>	<p>The revised HRA of the revised dWRMP24 has been refined to address this comment.</p>
	<p>The Woolston Water Treatment Works water recycling and Desalination Isle of Sheppey. Insufficient evidence has been provided to rule out an adverse effect on integrity with sufficient certainty. Further details can be found in section 1.4.2 of this letter.</p>	<p>Woolston WTW recycling option has been excluded from the revised dWRMP24. We have carried out a reassessment of the Isle of Sheppey desalination option.</p>
	<p>Groundwater: Romsey - new BHs (4.8MI/d) option. Operational phase for Romsey: new BH option and the conclusions drawn around Emer Bog SAC. It has been assumed that this site will not be impacted, but investigations will be needed to determine if this is the case. Note that the reference supporting this (Allen 2017) also does not appear in the reference list of the HRA.</p>	<p>The comment is noted. It was agreed in engagement with Natural England, that reference to further investigations would be to future works undertaken outside the process of completion of the revised dWRMP24 and where necessary would be considered in either future WINEP or future planning cycles</p>
<p>NE11 - Critical amendments required to the HRA</p>	<p>A number of options which were outlined in the company's plan at WRMP19 which still have environmental investigations outstanding, have not been included in the dWRMP. This includes but is not limited to a source in the West Chiltington (Sussex) area. The concern with the Sussex option is whether this has then been considered with the current supply demand forecasting and environmental implications on the wider Arun Valley and associated protected sites. These options should be considered in the HRA and SEA if still being considered viable options.</p>	<p>Current abstraction licenses are part of the WINEP process, not the WRMP. We have discussed all sources included in the current WINEP or other sustainability investigations in Annex 9 of the revised dWRMP24.</p> <p>Our Environmental Ambition scenarios (Annex 9) do consider the potential risk of sustainability reductions associated with both the West Chiltington and Petersfield licences. These primarily relate to preventing deterioration under the WFD but the investigations will also consider potential impacts, if any on any designated sites.</p>

Reference	Natural England comment	Southern Water Response
NE12 - Critical amendments required to the HRA	As a donor company of bulk supply to various New Appointment and Variations (NAV) the company must ensure the relevant environmental assessments for these transfers have been undertaken, in relation to the bulk transfer and the supply abstractions. The HRA must be updated accordingly if any environmental impacts are identified from these sources/transfers. This applies to any new options, or existing options where there has been material change. This is discussed further in section 1.4.4 of this letter.	NAVs are supplied through connections to our supply network. We have considered growth in our area as a whole without splitting it into NAVs and Southern Water connections. As such we have not considered any options specifically for the purpose of supplying NAVs only.
NE13 - Critical amendments required to the HRA	The HRA has not had regard to whether an impacted site is failing its conservation objectives, is in unfavourable condition or if there are current threats listed to the Habitats site which are relevant to water supply, water quality or flow etc. Where Habitats sites already have vulnerabilities listed that are likely to be exacerbated by the dWRMP options, this must be considered in the HRA. Where growth that is supported by the plan may cause or increase an existing conservation objective failure, the plan must remove this by providing alternative measures such as nature based solutions, alternative supply options, operational management or other measures that encourage improving condition and resilience. Again, for those options where this applies and they are proposed earlier in the plan, this must be considered in the relevant environmental assessments of this dWRMP (where it is applicable to Habitats sites this must be considered in the HRA).	The HRA has considered these aspects appropriately. The issue of 'growth' is fundamentally addressed by the WRMP process and the generation of the supply-demand balance. Potential abstraction licence reductions associated with preventing deterioration under the WFD through growth in abstraction are included in Annex 9 of the revised dWRMP24.
NE14 - Critical amendments required to the HRA	Catchment measures are not currently assessed in the HRA (more details on this issue are covered in section 1.2.3 of this letter), Natural England advises that they should be included. Catchment schemes are likely to have overall positive effects on biodiversity, but there is potential for them to impact Habitats sites if they affect natural processes (e.g., flooding, flows or habitat functioning) on which the sites' interest features	We have excluded catchment schemes from our revised dWRMP24 because they do not provide a direct DO benefit. However we have assumed that there will be catchment management schemes delivered via our WINEP and these benefits of catchment management are now included in our Environment Destination profiles.

Reference	Natural England comment	Southern Water Response
	depend. It is important to understand the risks and the potential for in-combination impacts with other options.	
NE15	<p>Linkage with Southern Water’s current Drought Plan</p> <p>Whilst it is understood that the drought orders/permits have been covered in more detail in the Drought Plan and assessed in the in-combination assessment, it should be clearly stated how the deficit will be addressed to ensure these options are not needed in the future as identified in the WRSE Regional Plan. Where relevant this must be clearly linked in the HRA to the drought orders/permits in the Drought Plan. Some of the options in the WRMP could be used to address these deficits but this is not clear from the information given. The WRSE assessment seems to have screened drought options in the HRA which have not been screened in Southern Water’s HRA, this must be addressed, and we strongly advise a consistent approach is taken between the Regional Plan and company WRMPs. More detailed comments on each option and specific concerns to designated sites regarding the HRA and SEA can be found in section 1.4.2 Options taken forward in dWRMP of this letter.</p>	<p>It is a long term priority for us to reduce reliance on drought permits and orders. As a regional group, we plan to remove all reliance on drought permits and orders by 2041 alongside achieving 1-in-500 year drought resilience. We have undertaken sensitivity testing with WRSE to understand the impacts on our Best Value strategy if we were to reduce this reliance earlier, or rely on them for longer.</p>
NE17 - Additional comments	<p>Natural England is pleased to see the HRA is in a clearly identifiable document, with a clear section layout. The HRA appropriate assessments have had regard to the relevant sites’ conservation objectives and Supplementary Advice to the Conservation Objectives (SACOs). However, Natural England is highlighting the following as examples of where editing and presentation has made the review of the dWRMP challenging:</p>	<p>The revised HRA of the revised dWRMP24 has been refined to address this comment.</p>

Reference	Natural England comment	Southern Water Response
	<p>The HRA is often lacking references to support the conclusions, for example the Newbury groundwater option.</p>	
	<p>For clarity, a consistent naming approach is needed especially for options between companies and WRSE, as these often vary e.g., the transfers between South East Water and Southern Water and those between Portsmouth Water and Southern Water. For example, the River Adur Offline Reservoir, the Petworth groundwater, Reconfiguration of Rye groundwater source, Canterbury (Broad Oak) to Near Canterbury GW, Romsey - new BHs and Hastings WTW (to augment storage in Darwell reservoir options) all use alternative names in Appendix D of the HRA compared to the other documents of the HRA. Southern Water should check and update all names to ensure that they are consistent between documents. This will make the documents and assessments easier to understand and help to ensure that all options are assessed fully.</p>	<p>We will work with WRSE to ensure consistency in the use of option names across companies' individual plans.</p>
	<p>Numbering of the sections and tables in the HRA (including the contents pages), and references to tables within the report, are inconsistent or incorrect. Page numbers are also absent. This makes the report difficult to review and comment on. For example, Table 0.3 on page 29/30 (meant to be Table 2.3 as per the above comment) several errors occur – Reference Southern Water_HSE_RE-DRO-ALL-ALL-si-ot t2 refers to the Lower Itchen in the drought option column and then the River Rother in the summary column. Some of the features impacted notably the 'Least water snipe fly' are not features impacted by the Lower Itchen drought orders, this is incorrectly labelled.</p>	<p>This has been addressed in the revised dWRMP24.</p>
	<p>The Eastern Yar3 option appears twice as the 'Eastern Yar3 replacement' (page 19 and 150). It is not clear whether this is the name for the option or a spelling error.</p>	<p>This has been addressed in the revised dWRMP24.</p>

Reference	Natural England comment	Southern Water Response
	Appendix A page 161 refers to hyperlinks to site documentation, but no hyperlinks are present.	This has been addressed in the revised dWRMP24.
1.2: Strategic Environmental Assessment		
NE18	<p>WRMPs are prepared for water management and set the framework for future development consents of projects listed in Annex II of the EIA Directive, including groundwater abstractions and impoundments. As such, WRMPs meet the requirements set out in the SEA Regulations requiring SEA to be completed. Natural England's views on the documents submitted as part of the SEA for this dWRMP are as follows:</p> <p>Natural England was consulted on Southern Water's SEA scoping as part of the WRSE Regional Plan SEA scoping. Natural England advised Southern Water in a letter dated 15 March 2022 (responded to in Appendix B of the SEA) that the WRSE scoping should not be solely relied upon and that the company would need to consult with Natural England and other relevant regulators separately as per the legal requirements (set out in Annex 2). This advice was not fully taken on board. It is unclear if Southern Water undertook the required checks and sought advice, Natural England does not have confidence that this process has been compliant, such as ensuring the WRSE environmental assessment methodology was suitable for their plan.</p> <p>In light of the Defra 25-year Environment Plan and the Environment Act 2021 objectives being published, the SEA should be updated to consider these targets (as detailed in Annex 2), as outlined in Appendix D of the SEA the WRMP24 should seek to protect and enhance the natural environment. Water companies should also check and work towards targets in place under the Government's Environmental Improvement Plan, now published under the Environment Act 2021. This is needs to be made clear throughout the SEA where this can be done.</p>	<p>Natural England were consulted on the scope of the SEA of WRMP24 in 2022 (and this was separate from the WRSE Environmental Assessment scoping which took place in 2020, with outcomes summarised in the November 2021, see https://www.wrse.org.uk/media/qmtb1e5v/method-statement-environmental-assessment-nov-2021.pdf).</p> <p>Natural England (along with all SEA statutory consultees) were invited to comment on the proposed approach to assessment (set out in scoping documentation) from 21 February to 27 March 2022, compliant with the requirements of SEA regulation 12(6). The proposed approach to assessment was based on the revised WRSE assessment methodologies to ensure consistency in the treatment of options between the dWRMP24 and draft Regional Plan (given the integrated nature of option assessment). However, the approach was then revised (following comments received to the scoping consultation and the June 2022 dWRMP24) and the further work undertaken for the October 2022 dWRMP24 submission. Consequently, WRSE scoping has not been solely relied upon for the SEA, and the scope and subsequent assessment work for dWRMP24 has been undertaken to comply with regulatory requirements, informed by consultee feedback, regulatory and sector guidance, noting that in some instances e.g. the revised March 2023 WRPG, this has become available after the completion of the dWRMP24 consultation and supporting assessments.</p>

Reference	Natural England comment	Southern Water Response
N19	<p>Natural England have concerns about the SEA screening and conclusions which are highlighted below:</p> <p>The list of options screened in the SEA and HRA appear to be different with more options screened in the SEA, this makes it hard to determine if the conclusions between documents are consistent and the impacts fully considered. Where there are impacts on high value receptors, such as protected sites, species, and habitats, this should be considered major adverse impact within the assessment.</p> <p>Please also ensure the naming of options is the same between the SEA and HRA. For example, in table NTS5 (page 17) of the SEA it refers to options as codes, whereas the HRA has both. Having both or just the option name makes it easier to follow which option is being referred to. This is also the case in other places such as Appendix E where the names appear to be different for some options compared to the HRA and technical report. Natural England advise this is checked and updated accordingly to ensure the names are consistent throughout the dWRMP. Some of the options have different DO outputs in different documents for example, the Hastings WTW (to augment storage in Darwell reservoir) appears in the SEA as 10MI/d option and in the HRA as a 9.5MI/d option, this should be updated accordingly throughout the WRMP.</p> <p>In Natural England's opinion the negative impacts on biodiversity have been underestimated for many schemes, with most schemes being ranked as a minor negative impact. Schemes such as the desalination plants and water recycling options in some cases could have a significant negative effect, the rankings for these schemes should be reviewed. Natural England gave detailed advice on the Fawley Desalination option at WRMP19 and subsequent</p>	<p>The revised HRA, WFD and SEA assessments of the revised dWRMP24 have been refined to address the request for consistency (between the assessments and with the revised dWRMP24).</p> <p>The Environmental Report of the revised dWRMP24 has been amended to ensure the consistent treatment of designated conservation and landscape sites and features within the SEA of the revised preferred options. This includes SSSIs, SSSI risk zones, MCZs, NNRs, Ancient Woodlands, National parks and AONBs, and supplements the range of features already considered when identifying, describing and evaluating the likely significant effects of the WRMP24. This has informed revisions to the pre- and post-mitigation assessment of likely significant effects against the biodiversity topic, which is then reflected in Sections 5, 6 and 7 of the revised Environmental Report.</p> <p>The revised SEA has included amendments to Section 4.5 Limitations of the Assessment, as appropriate.</p> <p>The reference to 'brine' has been clarified in further discussion with Natural England and has been confirmed that the term should only apply to effluent discharges of the desalination options and not the water recycling options.</p>

Reference	Natural England comment	Southern Water Response
	<p>RAPID gates, the assessments must be in line with that advice. Further details on this issue have been provided in section 1.4.2 Options taken forward in dWRMP of this letter.</p> <p>Section 4.5 of the SEA outlines the limitations of the assessment, whilst it is noted studies have been undertaken on the dispersal of plumes from desalination plants, many of the studies have not been undertaken in British conditions and assessments will be needed on a case-by-case basis. A caveat highlighting the regions and different conditions these studies were undertaken in should be added.</p> <p>In section 4.5, in regard to water recycling options, it is not evident that brine discharges from this process have been fully considered, and if so, the potential environmental impacts of these discharges and measures required to avoid/mitigate impacts such which will be different depending on aspects such as discharge location. It cannot be assumed that the treatment process will remove this if for example it is transferred back through a WTW.</p> <p>Section 6.2, Table 6.1 outlines the significant effects outlined by the SEA topic. It is unclear why only three options are deemed to have a significant negative impact on biodiversity, Natural England would not agree with this conclusion. The assessments for all options should be reviewed and updated, taking account of the information Natural England has provided to the relevant project teams on options in the WRMP19 plan. Only one landscape option is deemed to have a significant negative impact, this should also be reviewed for both construction and operation impacts.</p> <p>Some of the desalination plants do not seem to have been screened in the SEA, or if they have, they are under a different name or have been screened out with no negative impacts (which Natural England</p>	

Reference	Natural England comment	Southern Water Response
	<p>would disagree with), this must be clarified. The missing schemes are; Thanet Coast desalination and Thames Estuary desalination. These options are mentioned in the document but then not included in the screening tables (page 68 onwards). It is unclear how these desalination options will not have negative operational impacts on biodiversity, there is a lack of information available to justify this, especially as it is not apparent where these schemes will be situated. The conclusions drawn for those that are similar options do not seem to be consistent and there is a lack of detail to justify these differences. For example, the Petworth groundwater option is deemed to have a significant negative landscape impact (due to being located within South Downs National Park), whilst the Newbury groundwater option, which is situated within the North Wessex Downs AONB, only has a moderate impact. This option also has the potential for significant operational and construction impacts.</p> <p>There is a lack of information provided to justify the groundwater options not having a negative impact on the 'Water, Protect and enhance the quality of the water environment and water resources' objective, which currently has no options screened in for it. Without environmental assessments at these sites, impacts cannot be ruled out, where previous investigations cannot always be relied upon to support conclusions as there may have been material change such as the evidence base may not be up to date.</p> <p>MCZs are included in the screening criteria; however, it is not clear if impacts have been fully considered on these sites, especially for schemes such as desalinations. For example, the Thanet Desalination will discharge directly into or adjacent to the Thanet Coast MCZ which has not been included in the screening.</p>	

Reference	Natural England comment	Southern Water Response
	<p>The conclusions drawn for the Candover drought option do not match in the SEA and HRA, the HRA must be updated as outlined in the comments above in the HRA section. The Lower Itchen Drought Order options seem to have been screened in the SEA and not the HRA, the conclusions would be similar to that of the Candover drought options as both were assessed to the IROPI and compensatory measures stage of the assessment, for impacts to the River Itchen SAC. The conclusions must match for both the SEA and HRA, in this case the SEA is more accurate.</p> <p>As a donor company of bulk supply to various NAVs the company must ensure the relevant environmental assessments for these transfers have been undertaken, in relation to the bulk transfer and the supply abstractions, the SEA must be updated accordingly if any environmental impacts are identified from these sources/transfers. More details on this issue are outlined in Section 1.4.4 of this letter.</p>	
N20	<p>Table 5-4 (page 132) of the SEA summarises the post mitigation significant effects, it is unclear why this has only been completed for significant effects and not moderate effects, these must also be summarised in this section to ensure those effects are identified and can be addressed. The table title also implies these options have remaining significant effects post mitigation being applied, mitigation should be removing significant effects, this must be made clearer within the SEA. The SEA has also identified generic monitoring that might be appropriate, but in most cases, monitoring needs to be tailored to address the uncertainties of each option where appropriate, if it is not specific at a scheme level there is not enough confidence what is proposed will be sufficient to fill evidence gaps, this must be addressed. No timetable has been provided for the completion of this monitoring to remove impacts in the plan period. For options earlier in the WRMP (pre-2035) further details</p>	<p>Consistent with SEA regulation 12(2), the SEA 'shall identify, describe and evaluate the likely significant effects on the environment of implementing the plan or programme [the WRMP]' and Schedule 2(6) sets out that the Environmental Report shall (amongst other requirements) detail the 'likely significant effects on the environment'. Schedule 2(7) requires that the Environmental Report shall present 'The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme'. The revised Environmental Report of the revised dWRMP24 has been undertaken to be compliant with these requirements, which do not require reference to minor or moderate effects.</p> <p>SEA regulation 17 requires:</p> <ol style="list-style-type: none"> (1) The responsible authority shall monitor the significant environmental effects of the implementation of each plan or programme with the purpose of identifying unforeseen adverse effects at an early stage and being able to undertake appropriate remedial action. (2) The responsible authority's monitoring arrangements may comprise or include arrangements established otherwise than for the express purpose of complying with paragraph (1).

Reference	Natural England comment	Southern Water Response
	<p>are required such as a timetable that ensures evidence gaps can be delivered well in advance and support the evidence base in determining whether options are viable.</p>	<p>Section 9.3 of the Environmental Report reflects these requirements and notably takes into account the allowance of part (2) to ensure the monitoring measures proposed do not duplicate existing commitments. In consequence, the frequency of data collection is linked to existing monitoring programmes, with the data sources also reflective of the responsible body.</p>
N21	<p>As referred to in section 1.1 of this letter, the catchment measures proposed by Southern Water should be assessed where applicable in the SEA, especially as in many cases these measures are likely to have a positive benefit.</p>	<p>The revised catchment management measures have been reviewed, and where applicable and supported by appropriate information have been included in the revised Environmental Report of the revised dWRMP24.</p>
N22	<p>Natural England also have the following comments on the SEA in-combination/cumulative assessment:</p> <p>The cumulative impacts /in-combination assessment conclusion in the HRA and SEA do not seem to match especially in relation to biodiversity impacts. In addition, Natural England do not agree with the conclusions for all options, this must be addressed. For example, cumulative impacts seem to have been screened out with little or no supporting evidence, in some cases the supporting evidence would suggest a cumulative impact, contradicting the decision of screening these out (this is the case with the various desalination options). It is noted that these options have been assessed appropriately and cumulative impacts have been identified for climatic factors.</p> <p>Table 7.2 (page 142) of the SEA identifies three drought options which could have cumulative impacts, but incorrect mitigation has been considered, for example the text in the mitigation comments for those options refers to saline waste from either desalination and water recycling options that were not identified as options with cumulative impacts.</p> <p>As previously raised in this letter, further information and assessment is required across all relevant water</p>	<p>Section 7 of the SEA Environmental Report presents the findings of the assessment of cumulative effects (including secondary and synergistic effects) taking into accounts for both intra and inter plan and programme. The cumulative effects arising from the WRMP24 are presented for both construction and operation and pre- and post-mitigation against all the SEA topics. This has identified cumulative effects of the dWRMP24 in conjunction with the draft Regional Plan. This has been reviewed to ensure appropriate identification, description and assessment of likely significant cumulative, secondary and synergistic effects. This will take into account where relevant, other WRSE companies plans.</p>

Reference	Natural England comment	Southern Water Response
	<p>companies (and within WRSE's Reginal Plan) to justify the conclusion that there are no in-combination impacts from desalination options on designated sites and biodiversity. These options should be screened in the cumulative assessment appropriately and the impacts identified (as per table 7.2 and section 7.3.2 Other Water Company Water Resource Management Plans (WRMPs)).</p> <p>Please note Natural England and the EA are still working with Southern Water on the most current Drought Plan HRA (and subsequently this has not yet been published), in particular the in-combination impacts of drought options. Due to this, conclusions may change and therefore it must not be assumed cumulative impacts will not occur. If this affects assessments with options early in the WRMP timeline, this must be finalised and updated in this dWRMP (especially within section 7.3.2 Southern Water Drought Plan 2022). Other water company Drought Plans have not been considered in this section; this needs to be considered in the screening.</p> <p>Please note the RBMP 2022 are now available (as of December 2022). These should be considered within section 7.3.3 River Basin Management Plans (RBMP); Thames River Basin District and South East River Basin District Plans.</p> <p>Whilst Appendix D lists the Drought Plans and WRMPs of other water companies which need to be considered in the cumulative effects assessments, this should also include the NAVs within Southern Waters supply area.</p> <p>Please ensure Section 7.3.2 which covers the WRSE Reginal Plan is updated based on any changes made to the Regional Plan after the consultation period, as some conclusions could have changed. Some uncertainties remain around the conclusions drawn at</p>	

Reference	Natural England comment	Southern Water Response
	<p>this stage, some of these must be addressed by further environmental assessments.</p>	

Reference	Natural England comment	Southern Water Response
N23	<p>Natural England is pleased to see the SEA is in a clearly identifiable document, with a clear section layout. There are, however, inconsistencies and issues with editing/presentation which have made the review of the SEA challenging and should be addressed:</p> <p>Table 9-1 of the SEA (page 158) outlines sources for various information, this lists Natural England as the source for WFD data, this should read the EA.</p> <p>In Appendix D, the local table includes the AONBs and National Parks which could be impacted by this plan, to make it easier to follow this table this should be structured by protected area types such as AONBs, National Parks, water company plans, etc.</p> <p>Appendix E (environmental baseline) has several formatting issues with maps and figures being partially of the page, these could not be reviewed effectively for this reason.</p> <p>The SEA appears to have two appendices labelled E, one starts on page 211 and is titled 'Environmental baseline' and the second on page 252 and is titled 'Summary of preferred options by WRZ', this should be updated.</p> <p>The WRZs are referred to as different names, for example in the SEA zone HKZ it is referred to as Hants near Basingstoke but in Annex 9 it is termed Hants Kingsclere.</p> <p>Consistency is required across the WRMP to avoid confusion.</p>	<p>The Environmental Report of the revised dWRMP24 has been amended to reflect the comments (in terms of amendments to Table 9-1, formatting issues and consistency).</p>

Reference	Natural England comment	Southern Water Response
N24	<p>1.2.1 SSSIs in the SEA</p> <p>An assessment of the SSSIs within the study area has been undertaken, the SSSI assessment is not currently a distinct identifiable section in the SEA. Natural England recommends the SSSI section is updated to make it a clear section, with SSSI and local wildlife sites impacted by a scheme clearly identified for each option. Natural England also have the following comments on the SEA regarding SSSI assessments:</p> <p>The plan does not list the specific SSSIs for each option in the main documents, this is required to ensure all the relevant SSSIs, and their interest features have been identified and the impacts to these sites correctly assessed.</p> <p>The SEA should also assess duties to restore sites where relevant within the SEA area.</p> <p>Appendix E (environmental baseline) list the SPAs, Ramsar's and SACs within the plan boundary area which are impacted, but not to the SSSIs, national or local wildlife sites level, this section must be updated to include these sites.</p> <p>When undertaking assessments of impacts to SSSIs, relevant documents such as the citation, Favourable Condition Table (FCT) and condition assessment data should be referred to.</p> <p>The dWRMP does not include proposals to enhance SSSI resilience to potential impacts from changes in water availability including improving site condition, in line with the company duties as set out in Annex 2.</p> <p>It is not clear whether improvements are timetabled to meet the 2042 target within the 25 Year Environment Plan. Though there are sporadic improvements suggested within the SEA as part of mitigation</p>	<p>The Environmental Report of the revised dWRMP24 has been amended to ensure the consistent treatment of designated conservation and landscape sites and features within the SEA of the revised preferred options. This includes SSSIs, SSSI risk zones, MCZs, NNRs, Ancient Woodlands, National parks and AONBs, and supplements the range of features already considered when identifying, describing and evaluating the likely significant effects of the WRMP24. This includes amendments to Appendix E (the baseline information) to reflect the range of designated sites and features outlined.</p> <p>The Environmental Report of the revised dWRMP24 has been amended to reflect the most recent information from the Drought Plan e.g. the findings of the latest environmental assessments undertaken to support the Test Drought Permit submission in 2022.</p> <p>Annex 9 of the revised dWRMP24 has accordingly been updated.</p>

Reference	Natural England comment	Southern Water Response
	<p>strategies, there is not a commitment or deadline to have these improvements completed.</p> <p>It is unclear at this stage if the monitoring and/or mitigation proposed for SSSIs will be adequate, further details and specific options will be needed in most cases for the relevant supply options.</p> <p>Where there is a within-licence abstraction impact on a protected site which will increase with growth during the plan period, these impacts will need to be mitigated or removed. This should consider whether demand management and/or operational minimisation can support minimisation or removal of impacts on protected sites.</p> <p>It is currently unclear in the SEA how the impacts from drought options (to both SSSIs and Habitats sites) will be removed, especially as schemes are often not being linked where applicable to these drought options. Any options which alleviate the need for drought options should be clearly identified in the SEA. Also, any drought options which do not currently have a scheme in the plan to remove the impact, requires further assessment to ensure impacts can be removed.</p> <p>Page 5 of Annex 9 refers to CSMG (Common Standards Monitoring Guidance) targets in relation to flow only, CSMG targets cover other parameters such as water quality and are the parameters used to assess the condition of a designated site and their interest features (this applies to any designated sites, not just those that are rivers). The following needs to be considered across all designated sites that are screened in/are assessed and in relation to the wording on page 5;</p> <p>CSMG is used by Natural England to assess whether a designated site meets the criteria for favourable</p>	

Reference	Natural England comment	Southern Water Response
	<p>condition, this can for example include flow and water quality targets for water-dependent designated sites such as rivers.</p>	
N25 -	<p>1.2.2 Protected landscapes in the SEA Landscapes in general and protected landscapes have been considered in the SEA, and some negative impacts identified for some options. But it is unclear</p>	<p>The Environmental Report of the revised dWRMP24 has been amended to ensure the consistent treatment of designated conservation and landscape sites and features within the SEA of the revised preferred options. This includes amendments</p>

Reference	Natural England comment	Southern Water Response
	<p>how the conclusions have been drawn and justified in some cases. For example, some similar options within protected landscapes have been deemed to have a significant negative impact whilst others have not, such as the Petworth groundwater scheme which does have a significant impact whilst the Newbury groundwater scheme a moderate impact.</p> <p>Where possible protected landscapes should be avoided for major infrastructure work. Where this is not possible, further engagement is needed with Natural England and relevant authorities at an early stage to minimise impacts or determine alternative schemes. Natural England is pleased to see the historic environment is considered in the SEA objectives, as well as engagement being planned with Historic England on the cultural heritage aspects of this plan (of which are important protected landscape feature). As outlined in the dWRMP (which Natural England support) impacts to historic sites and landscapes should be avoided where possible.</p> <p>Southern Water should also ensure they meet relevant heritage and nature recovery objectives of which the historic environment is part of, as outlined in the 25 Year Environment Plan, please refer to Annex 2 for further details. Generic mitigation has been proposed in the SEA, some of which covers impacts which could occur in protected landscapes. At this stage, without more detailed assessment on the options proposed it is unclear if this mitigation will be suitable to alleviate the impacts identified, this should be addressed, if this applies to any options early in the plan this will require full assessment in this dWRMP. A Protected Landscape Mitigation Strategy may be needed where multiple schemes impact a protected landscape over the plan period, this should also include the options of other companies within the same protected landscape.</p>	<p>to Appendix E (the baseline information) to reflect the range of designated sites and features outlined.</p> <p>Mitigation proposed reflects the strategic nature of the plan, and anticipates further stages of option refinement and scheme development, which will be supported, as appropriate by further assessment and mitigation. Where relevant, this could include the use of a Protected Landscape Mitigation Strategy.</p>

Reference	Natural England comment	Southern Water Response
N26	<p>1.2.3 Biodiversity in the SEA</p> <p>Natural England would like to commend Southern Water for the catchment measures being implemented, such as those through the Catchment First programme which will lead to greater environmental resilience and biodiversity improvements. Though these catchment measures may not provide direct DO benefits and primarily seek to improve environmental functioning, as an option within the WRMP, they should be considered within the relevant environmental assessments. This includes the HRA, SEA, Natural Capital Assessment (NCA), BNG and Invasive Non-Native Species (INNS) assessments. Natural England defers to the EA on WFD requirements. A BNG or NCA does not appear to have been completed as part of this plan, these sections should be completed. If these have been undertaken, these need to be signposted to within the WRMP and be clearly identifiable sections or documents.</p> <p>In Appendix E (Environmental baseline) there is a section for priority species and habitats, but this is not listed per scheme, so it is hard to determine what has been assessed where. This information should be provided where the conclusions for each option and the assessments undertaken should be clear. For example, it might be clearer if this section is in tabular form with a column for protected species and column for protected habitats. This must include all protected species and priority habitats assessed within the SEA for the relevant options. For options where mitigation is required, this needs to be specific and appropriate for those sites impacted and this must be updated in the SEA once full assessments are completed.</p> <p>Limited details have been provided for the monitoring of priority habitats, this has been done at a plan level with generic themes and not a scheme level. We understand that further specific monitoring</p>	<p>The SEA provides a proportionate assessment of the WRMP24 covering a comprehensive range of effects, consistent with those identified in Schedule 2(6) of the SEA regulations and anticipated for water resource proposals. This includes effects on biodiversity, flora and fauna, which are assessed against the SEA objective 'Protect and enhance biodiversity, priority species, vulnerable habitats and habitat connectivity (no loss and improve connectivity where possible)' and supported by a range of assessment questions, including whether 'the option likely to affect ancient woodland, priority habitat or species?'. Information is presented in the revised preferred options assessments that identifies whether priority habitats and species are present and potentially affected.</p>

Reference	Natural England comment	Southern Water Response
	<p>requirements will be incorporated into detailed designs and plans for scheme development, which will be discussed with relevant regulatory and statutory bodies. However, for those options in the earlier stages of the plan more information and commitment to the required specific monitoring for those options must be included in this dWRMP, especially where there is uncertainty, potential impacts and/or mitigation proposed.</p> <p>The Local Nature Reserves (LNRs), local wildlife sites/SINCs should also be assessed/listed if deemed to be impacted, clarity is required to ensure this has been completed in the full screening assessment (Appendix H and I). Any risks identified to these sites should be highlighted where relevant. Natural England would like to remind the company that the SEA should consider the public body duties under the NERC Act 2006, as strengthened by the Environment Act 2021 to 'further the conservation and enhancement of biodiversity', including restoration and enhancing a species population or habitat.</p>	

Reference	Natural England comment	Southern Water Response
N27	<p>1.2.4 Species Recovery and Protected species</p> <p>No measures have been proposed which contribute to the 2030 species target, this should be investigated for relevant options and added to the SEA in the relevant sections. It is noted that this has been referred to in Appendix E (Environmental baseline) of the dWRMP. However, further information is required to demonstrate that this is linked to and will support achieving the Environment Act targets and objectives, particularly those around nature and species recovery, are met (as set out in Annex 2). Water companies should check and work towards targets in place under the Government's Environmental Improvement Plan, now published under the Environment Act 2021.</p> <p>As referred to in section 1.2.3 within Appendix E (Environmental baseline), there is a section for priority habitats and protected species, but these are not identified per scheme and is currently limited to a few key species (which raises concern that not all protected species have been screened appropriately). The conclusions for each option and the assessments undertaken need to consider all relevant priority habitats and/or protected species and this needs to be made clearer.</p> <p>This could be in the form of a table as outlined in section 1.2.3 of this letter.</p>	<p>We are also working to incorporate Nature Recovery Lists into our AMP8 WINEP. Our Catchment First and wider catchment approach is described in Annex 9 of our revised dWRMP24.</p>

Reference	Natural England comment	Southern Water Response
N28	<p>1.2.5. Climate change in the SEA The SEA has included a climatic objective, but this objective is society focused, rather than wildlife resilience focused. Natural England strongly advises that the assessment of WRMP options considers their impacts on nature in light of climate change and assess whether the options would hinder wildlife adaptation and/ or resilience to environmental changes. The impacts from climate change are covered and referenced in Appendix E (Environmental baseline), however, more clarity is required to understand whether this has been fully considered when assessing impacts of each option.</p> <p>Beyond what has been considered during the option selection stages conducted by WRSE for future environmental scenarios and reduction of abstractions, there does not seem to have been explicit consideration to assess how much water is needed to support nature-based solutions in the SEA. Reference to the England peat action plan should be made for sites it is deemed necessary to wet peat to help achieve the objectives of the site and meet the targets outlined in the peat action plan.</p>	<p>The SEA provides a proportionate assessment of the WRMP24 covering a comprehensive range of effects, consistent with those identified in Schedule 2(6) of the SEA regulations and anticipated for water resource proposals. This includes effects on biodiversity, flora and fauna, which are assessed against the SEA objective 'Protect and enhance biodiversity, priority species, vulnerable habitats and habitat connectivity (no loss and improve connectivity where possible)' and supported by a range of assessment questions. including whether 'the option enables or reduces the potential of water dependent wildlife to adapt to climate change?'</p>
N29	<p>1.2.6 Marine Conservation Zones (MCZs) in the SEA Several MCZs are situated within the plan area and appear to have been assessed from the information provided (Appendix E – environmental baseline, lists 14 in the plan area). All relevant MCZs should be identified in the SEA (the obligations to notify Natural England where South East Water might impact MCZs is outlined in Annex 2, Section 2.2.7). It should also be made clear in the assessments and conclusions which options could impact upon these sites. The MCZ assessment, much like the SSSI, should be in a clearly identifiable section. If it has not already been used and referred to, the conservation objectives and</p>	<p>The Environmental Report of the revised dWRMP24 has been amended to ensure the consistent treatment of designated conservation and landscape sites and features within the SEA of the revised preferred options. This includes SSSIs, SSSI risk zones, MCZs, NNRs, Ancient Woodlands, National parks and AONBs, and supplements the range of features already considered when identifying, describing and evaluating the likely significant effects of the WRMP24. This includes amendments to Appendix E (the baseline information) to reflect the range of designated sites and features outlined.</p>

Reference	Natural England comment	Southern Water Response
	advice for each MCZ should also be used when undertaking these assessments.	
N30	<p>1.3 Water Framework Directive Assessment Comments on the WFD assessment are a matter for the EA however Natural England notes the following: The WFD assessment needs to be checked to ensure the options assessed are consistent and align with those assessed in the HRA and SEA (and those listed in the technical report).</p> <p>It is advised that the WFD assessment, for relevant options, identifies when the waterbody being assessed is also designated as an SSSI, SAC, SPA and/or Ramsar and links to other appropriate assessments such as the SEA and HRA. It is noted this has been done in some instances such as those in the Arun Valley, however this is not a consistent approach. Sites where this linkage is not clear include those in the vicinity of the River Itchen and River Test waterbodies.</p> <p>Southern Water have included the risk posed to Groundwater Dependent Terrestrial Ecosystems (GWDTE) which are also SSSIs within the SEA.</p>	The revised WFD assessments of the revised dWRMP24 have been refined to address this comment.
	1.4 Assessment against wider Water Resource Planning Guidance expectations	

Reference	Natural England comment	Southern Water Response
N31	<p>1.4.1 Relationship to Water Resources South East (WRSE) Regional Plan</p> <p>Southern Water's dWRMP regularly refers to the WRSE Regional Plan. Any updates made to the WRSE Regional Plan after consultation should also be considered in this dWRMP and updates made, as necessary.</p> <p>There currently seems to be omissions/inconsistencies between each water company plan and the WRSE Regional Plan. The same options are often named differently or options which involve two water companies are not accurately assessed or referenced in each of the companies' relevant plans. Southern Water should ensure that options that involve more than one company are listed and assessed appropriately in their plan and vice versa with the other companies. The naming of these options should also be the same between companies and the Regional Plan. Some examples of where this issue applies are the following:</p> <p>Those shared between Portsmouth Water and Southern Water i.e., Havant Thicket and the associated listed bulk transfers. These options seem to be different in both company plans; they are not adequately assessed in both and conclusions in some cases are not aligned.</p> <p>There are many inconsistencies between Southern Water and South East Water, across the relevant supply areas, but more specifically those in the Hampshire and Kent regions where overlap between options and deficits occur.</p> <p>Affinity Water lists the following option in their plan, Hythe (effluent reuse) water recycling scheme, which involves a Southern Water WwTW asset for the recycled water. This has not been considered in Southern Waters dWRMP. This should be considered in both plans and the information and assessments should be consistent between companies.</p>	<p>WRSE provides a single set of outputs for all companies. Discrepancies option names can occur due to renaming options as part of SEMD compliance and maintaining consistency with SEMD names used in the past. We will try to ensure consistency in naming of shared options.</p> <p>In cases where a neighbouring company relies on one of our sites for their WRMP, then we cannot include it in our WRMP unless we are deriving a benefit from it too. For example, South East Water is planning to use effluent from one of our WTWs in Brighton. We will get an indirect benefit from the option as it will allow South East Water to export water to us. However, our plan will not include the recycling option and its transfer to South East Water reservoir. It will only include the transfer from South East Water reservoir to our WSW.</p> <p>We have reviewed our Environmental Destination scenarios and revised them where appropriate.</p> <p>We agree with the objectives of licence capping. However, we also need to ensure that we are able to meet our statutory obligations as a water undertaker. We aim to implement licence capping as soon as practicable. This is further discussed in our revised dWRMP24.</p>

Reference	Natural England comment	Southern Water Response
	<p>Specific comments about the HRA and WRSE assessments have been made in the HRA section of this letter, this should be referred to alongside this section when updates are made.</p> <p>Annex 9 of the WRMP outlines important information about the environmental destination approach which needs to be brought more clearly into the WRMP and be more clearly signposted to in the relevant sections of the plan. The Reginal Plan scenario BAU+ may not be sufficiently robust to ensure non-European sites which are water-dependent such as SSSIs, priority habitat and protected species are protected and can meet targets to achieve favourable condition by 2030 (as set out in the Environment Act).</p> <p>Natural England would encourage licence caps in catchments where environmental sensitivities have been identified, supporting better resilience in catchments and to water-dependent protected sites. This will be particularly beneficial in catchments where there are other significant water related issues affecting condition of protected sites, such as those Habitats sites where Nutrient Neutrality applies (for example Stodmarsh Habitats sites). Revoking or reducing licenses and/or identifying alternative supply options as solutions are required for those abstractions where there are known adverse effects (or where there is potential for adverse effects), as outlined in our HRA comments in section 1.1 of this letter. Whilst it is positive to see this is covered along with water neutrality requirements within Annex 9, this information must be considered in this dWRMP HRA and timelines based on when this must be delivered to remove impacts to Habitats sites. This should then be reflected in the environmental destination and considered appropriately within supply/demand forecasting. Please also refer to section 2.2.3 of Annex 2 of this letter for further details on the requirements</p>	

Reference	Natural England comment	Southern Water Response
	<p>under the Environment Act. Water companies should check and work towards targets in place under the Government's EIP, now published under the Environment Act 2021.</p>	

Reference	Natural England comment	Southern Water Response
N32	<p>1.4.2 Options taken forward in the dWRMP The following options are proposed early in the plan (pre-2035), Natural England expects full environmental assessments to be undertaken for these options in this dWRMP, including an in combination assessment (see below):</p> <p>Transfer: Hampshire grid (reversible link HW-HA) (30MI/d) 2028 Groundwater: Newbury WSW (1.3MI/d) 2028 Groundwater: Romsey - new BHs (4.8MI/d) 2032 Transfer: Romsey Town & Broadlands valve (HSW-HRZ) (3.1MI//d) 2026 Transfer: Romsey Town & Broadlands valve (HSW to HRZ) 2026 Import from Portsmouth Water (9MI/d) 2026 Import from Portsmouth Water to Moor Hill reservoir extension (30MI/d) 2026 Treatment capacity: Upgrade Otterbourne WSW (30MI/d) 2031 Transfer: Sandy Lane Abbotswood (HSE-HRZ) (1.1MI/d) 2026 Import from Portsmouth Water (21MI/d) 2030 Treatment capacity: Upgrade Test surface water WSW (60MI/d) 2031 Transfer: Hampshire grid (reversible link HSE-HW) (30MI/d) 2028 Groundwater: Newchurch LGS 2035 Recycling: Sandown WwTW (8.1MI/d) 2028 Recycling: Sittingbourne industrial reuse (7.5MI/d) 2031 Recycling: Medway WwTW (12.8MI/d) 2031 Import: South East Water Kingston to KTZ Near Canterbury (2MI/d) 2026 Transfer: KTZ-KME (14MI/d) 2026 Import: South East Water Kingston to KTZ Near Canterbury (2MI/d) 2026 Recycling: Recharge of Havant Thicket reservoir from Portsmouth Harbour WTW and new WRP (60MI/d) 2031</p>	<p>A number of these options involve enhancements to existing transfers or have been removed from the revised dWRMP24 as shown below.</p> <p>Transfer: Hampshire grid (reversible link HW-HA) (30MI/d) 2028 Groundwater: Newbury WSW (1.3MI/d) 2028 Groundwater: Romsey - new BHs (4.8MI/d) 2032 Transfer: Romsey Town & Broadlands valve (HSW-HRZ) (3.1MI//d) 2026 (This is enhancement/refurbishment of an existing asset, not a new asset) Transfer: Romsey Town & Broadlands valve (HSW to HRZ) 2026 (This is the same option as above) Import from Portsmouth Water (9MI/d) 2026 (This option is now excluded from the revised dWRMP24) Import from Portsmouth Water to Moor Hill reservoir extension (30MI/d) 2026 (This option is the extension of an existing transfer; not a new option) Treatment capacity: Upgrade Otterbourne WSW (30MI/d) 2031 (This option is now excluded from the revised dWRMP24) Transfer: Sandy Lane Abbotswood (HSE-HRZ) (1.1MI/d) 2026 (This involves enhancement/refurbishment of an existing asset, not a new asset) Import from Portsmouth Water (21MI/d) 2030 Treatment capacity: Upgrade Test surface water WSW (60MI/d) 2031 (This option is excluded from the revised dWRMP24) Transfer: Hampshire grid (reversible link HSE-HW) (30MI/d) 2028 Groundwater: Newchurch LGS 2035 Recycling: Sandown WwTW (8.1MI/d) 2028 Recycling: Sittingbourne industrial reuse (7.5MI/d) 2031 Recycling: Medway WwTW (12.8MI/d) 2031 Import: South East Water Kingston to KTZ Near Canterbury (2MI/d) 2026 Transfer: KTZ-KME (14MI/d) 2026 (This involves enhancement/refurbishment of an existing asset, not a new asset) Import: South East Water Kingston to KTZ Near Canterbury (2MI/d) 2026 Recycling: Recharge of Havant Thicket reservoir from Portsmouth Harbour WTW and new WRP (60MI/d) 2031 Desalination: Sussex Coast (Modular 0- 10MI/d) (10MI/d) 2028 (This option is excluded from the revised dWRMP24) Transfer: SWZ-SBZ v6 valve (17MI/d) 2026 (This involves enhancement/refurbishment of an existing asset, not a new asset) Transfer: SWZ-SBZ additional through v6 valve (13MI/d) 2026 (This involves enhancement/refurbishment of an existing asset, not a new asset) Import: PWC to Pulborough WSW (15MI/d) 2027 (This option is the extension of an existing transfer; not a new option)</p>

Reference	Natural England comment	Southern Water Response
	<p>Desalination: Sussex Coast (Modular 0- 10MI/d) (10MI/d) 2028 Transfer: SWZ-SBZ v6 valve (17MI/d) 2026 Transfer: SWZ-SBZ additional through v6 valve (13MI/d) 2026 Import: PWC to Pulborough WSW (15MI/d) 2027 Transfer: Rock Road bi-directional transfer (SWZ-SNZ) (15MI/d) 2026 Recycling: Littlehampton WwTW (15MI/d) 2028 Tilmore to Pulborough: 10MI/d 2031 Outwood To Turners Hill: 10MI/d 2031 Transfer: Winter transfer stage 1 - Provision of a permanent sludge treatment facility at Pulborough WSW (2MI/d) 2031</p> <p>Detailed comments on each option within the dWRMP can be found below by supply area, this section should be read in conjunction with our HRA comments in section 1.1 and SEA comments section 1.2 of this letter where specific concerns and issues relevant to those documents have been outlined. Natural England have also provided comments on some of the options listed below in previous WRMP responses, most notable are those of WRMP19, these responses should also be referred to for relevant options. This has been flagged below for most options this is relevant for.</p>	<p>Transfer: Rock Road bi-directional transfer (SWZ-SNZ) (15MI/d) 2026 (This involves enhancement/refurbishment of an existing asset, not a new asset) Recycling: Littlehampton WwTW (15MI/d) 2028 Tilmore to Pulborough: 10MI/d 2031 Outwood To Turners Hill: 10MI/d 2031 Transfer: Winter transfer stage 1 - Provision of a permanent sludge treatment facility at Pulborough WSW (2MI/d) 2031</p>
Western Area Strategy		
N33	<p>Hampshire grid (reversible link HW-HA) (30MI/d), Transfer: Hampshire grid (reversible link HA-HK) (10MI/d), Transfer: Hampshire grid (reversible link HSE-HW) (30MI/d) All of these options are a series of new pipelines creating resilience to the network, two being 30MI/d and the other 10MI/d. Natural England has not been engaged on the latest plans for these options. These options have the potential to pass through or cross the</p>	<p>A meeting was held between Southern Water and Natural England on 26 April 2023 where we presented an overview of these schemes. We intend to continue the engagement with Natural England on this option.</p>

Reference	Natural England comment	Southern Water Response
	<p>River Test SSSI, the River Itchen SAC and SSSI depending on the route taken. Appropriate assessments have been undertaken for these options; uncertainties remain around the environmental impacts at this stage.</p> <p>There is potential based on the route proposed that an adverse effect on integrity could occur to Emer Bog SAC, this site does not appear to have been screened but could be outside of the zone of influence, this requires clarification. The operation impacts remain uncertain at this stage, but if situated correctly could be avoided.</p>	
N34	<p>Hampshire Water Transfer and Water Recycling Project (a Strategic Resource Option)</p> <p>Detailed comments on this option will not be provided in this letter as this is an option Natural England are currently assessing with the project team through RAPID. Natural England have several outstanding concerns with this option which still need to be fully addressed, such as the river crossings of the River Itchen and River Meon, and the in-combination impact of the discharge with that from the proposed Sandown water treatment works recycling option on the Solent protected sites. This work is ongoing, and we are continuing to work with the project teams on this scheme and those concerns. Southern Water should ensure that progress and conclusions from the environmental assessments undertaken via RAPID are reflected in this dWRMP.</p>	<p>The comment is noted. We will incorporate comments by Natural England in our delivery plan for this option.</p>

Reference	Natural England comment	Southern Water Response
N35	<p>Recycling: Recharge of Havant Thicket reservoir from Portsmouth Harbour WTW and new WRP (60MI/d)</p> <p>This is a larger version of the above scheme. Detailed comments on this option have not been provided as this is an option Natural England are currently assessing with the project team through RAPID. Natural England have several concerns with this option which still need fully addressing, such as the river crossings of the River Itchen. But we are continuing to work with the project teams on this. A bigger plant as proposed here would have a greater brine discharge volume which will need to be considered alone and in-combination with other options including that of the Sandown water recycling option.</p> <p>Limited detail is provided in the HRA stage 1 screening for this option for all sites. Further clarity and justification is required as it also unclear how at this stage the Solent and Southampton Water SPA and Ramsar sites can be screened out from operational impacts. These designated sites along with others in the Solent could be impacted by the brine discharge from this option. The title includes new WRP, so it is assumed this option is referring to the recycling plant as well as the pipelines. Further discussions with the project team should be undertaken for this option and this section updated accordingly.</p>	<p>The comment is noted. We will engage with Natural England once the final size of the WRP and pipeline to Havant Thicket Reservoir is confirmed.</p>

Reference	Natural England comment	Southern Water Response
N36	<p>Recycling: Sandown WwTW (8.1MI/d) Natural England has had some engagement on this option with the project team, but limited details are known to date. Further discussions on this option are needed, especially as Natural England has some concerns about impacts to protected sites. Some of these concerns were expressed in our response to WRMP19 and still need to be addressed. The text provided in the HRA for operation of the scheme at stage 1 is unclear for the Solent and Dorset Coast SPA, the Solent and Southampton Water SPA and Ramsar and the Solent and Isle of Wight Lagoon SAC.</p> <p>There is currently not enough data to determine if the physico-chemical quality elements of the waterbody will be impacted. For that reason, these sites cannot be screened out. The HRA screening does not currently seem to screen for the brine discharge that will be a by-product of this process, this could also impact the following sites in addition to the ones currently screened in; South Wight Maritime SAC and the Solent Maritime SAC. Limited modelling has been completed for this option to date so these impacts cannot be ruled out with any certainty at this stage. This scheme also needs to consider the in-combination impact of the discharge with that from the proposed Hampshire Water Transfer and Water Recycling Project option or variations of this scheme as proposed in the WRMP.</p>	<p>A meeting between Southern Water and Natural England was held on 19 May 2023 to discuss this option. We intend to continue the engagement with Natural England on this option.</p>
N37	<p>Groundwater: Romsey - new BHs (4.8MI/d) Limited information has been provided about this option to date, and it is unclear why this option has been selected as it will likely increase abstraction in the River Test catchment when other projects including those in WRSE are looking to reduce abstraction on chalk streams. This has potential to impact flows further within the River Test SSSI catchment in-combination with other abstractions. The screening conclusions currently remain uncertain due</p>	<p>Every new groundwater option or enhancement to an existing option will include an assessment of any potential environmental impacts and any mitigation measures that may be required.</p>

Reference	Natural England comment	Southern Water Response
	<p>to the lack of detail available for this option. Any new pipelines required for this option would also need to consider the environmental impacts. In Appendix D of the HRA this is referred to as its alternative name, please update and ensure a consistent approach is taken throughout the plan.</p> <p>Uncertainties also remain around the conclusions for the operation of this scheme in relation to Emer Bog SAC. It has been assumed that this site will not be impacted but this is not justified with enough certainty and/or evidence. Investigations will be needed to determine if this is the case. The nutrient levels and water-dependent features of the site indicate this is in part a groundwater fed mire, which would indicate some connectivity with the aquifer.</p> <p>Whilst this option proposes to operate within the headroom of existing licences, as this is a change to current usage the assessment must determine whether this will lead to potential impacts to protected sites or priority habitats.</p>	
N38	<p>Transfer: Romsey Town & Broadlands valve Limited details have been provided on this option, but more detailed environmental assessments will be needed at a project level. With the information presented, Natural England would agree that the risk to Habitats sites is low, so is broadly in agreement with the conclusions of the HRA at this stage. Natural England have not had any involvement in this option, whilst an appropriate assessment has been undertaken as more information becomes known our view may be subject to change. The works will take place in parkland within 500 metres of the River Test, checks should be done to determine if this is historic parkland and ecological assessments of this area should be undertaken prior to works commencing. Appropriate mitigation will be needed to avoid impacts to the River Test SSSI.</p>	<p>Every new groundwater option or enhancement to an existing option will include an assessment of any potential environmental impacts and any mitigation measures that may be required.</p>

Reference	Natural England comment	Southern Water Response
N39	<p>Recycling water at Woolston Water Treatment Works</p> <p>Natural England has concerns about this option due to the limited information provided to date. The details imply treated water from Woolston WwTW will be discharged to the River Itchen above PWC Source A on the Lower Itchen and that an additional discharge into the River Itchen at Otterbourne will also be needed. Any additional discharges of any nature from Otterbourne will need further investigation to determine the impact to the River Itchen SSSI/SAC, but with the limited assessment to date and the uncertainty regarding the nature of this discharge also is a concern. Natural England had concerns to similar options put forward in the WRMP19 which involved using the River Itchen SAC/SSSI as an environmental buffer and these were subsequently dropped where an environmental buffer lake option was taken forward instead. The River Itchen SAC/SSSI, as Natural England outlined for previous options, must not be used as an environmental buffer. This would result in changes to the water chemistry of the river, impacts to species (of which are interest features of the site) which rely on the river, and impact on flows. It is therefore disappointing to see the following text for this option written, as these concerns were clearly outlined by Natural England at WRMP19: 'Although this water discharged will not be 'chalky' in nature, it is recognised that the treated effluent will be discharged at the tidal limit and will have limited impact on the river water quality and will not impact on the Annex 1 habitat.' It is also unclear who this is 'recognised' by as the environmental regulators have expressed concerns about options using the River Itchen SAC as a buffer on numerous occasions.</p> <p>From the lack of information provided, it is unclear where the brine waste from the water recycling process will be discharged, this has the potential to impact the Solent protected sites and/or the River</p>	<p>This option has been excluded from the revised dWRMP24.</p>

Reference	Natural England comment	Southern Water Response
	<p>Itchen SAC. A discharge within the Southampton Water estuary could cause significant environmental impacts to these sites. To the River Itchen SAC this would have a significant impact to the interest features of the site, especially due to the freshwater nature of the environment. An appropriate assessment has been undertaken for this option, but uncertainties remain. Natural England would not agree with this option being assessed as low sensitivity for habitat and interest features for the Solent and Dorset Coast SPA, this site is likely to be impacted by this scheme as currently proposed. A change to the functioning habitat of the Solent and Southampton Water SPA, Ramsar as alluded to would not be acceptable.</p> <p>This option has not been appropriately assessed, with Natural England's previous advice not being taken on board. It is Natural England's view that this option has the potential for significant impacts to several Habitats sites and their interest features with the information presented to date, where mitigation would not remove the adverse effects. This option will therefore likely need to progress to the next stage of the HRA (Stage 3).</p> <p>Natural England do not agree with the conclusions for this option at this stage and do not see how this option as proposed can conclude no adverse effect on integrity of the River Itchen SAC or the Solent Habitat sites as currently presented.</p>	

Reference	Natural England comment	Southern Water Response
N40	<p>Groundwater: Test MAR (5.5MI/d)</p> <p>Limited details on this scheme and where this would be situated have been provided. It is unclear at this stage if the geology in this area is suitable for this option. This option has a potential to impact the River Test SSSI and impacts to Habitats sites downstream of the River Test also remain unclear at this stage. Due to these uncertainties over the operation of this scheme, it is Natural England's view that the Solent Habitats sites cannot be screened out at this stage. It is also unclear where in the lower Test this will be situated (in relation to land owned by Southern Water) as referred to in the description for this scheme.</p>	<p>This is a new option that requires further investigation to assess its feasibility. We have allowed a 10-year lead time for investigations to be completed. We will be engaging with the EA and Natural England in due course.</p>
N41	<p>Newbury groundwater option</p> <p>In the HRA (table 0.1, page 17) it states that the river Enbourne will not be impacted by the increased abstraction, proposed with this option, due to its perched nature above London Clay. Hydrological assessments will be needed to confirm if this is the case, currently limited evidence has been presented to support this conclusion, any data to justify this conclusion should be referenced/included. Natural England is broadly in agreement with the conclusions drawn for River Lambourn SAC for this option at stage 1 of the HRA, however, some uncertainty does remain around the operational impacts for the Kennet and Lambourn Floodplain SAC and the Kennet Valley Alderwoods SAC. A reference should also be provided to support the conclusion that these sites are surface water fed. Further investigations will be needed at a project level to determine if the SACs are impacted by this option either alone or in-combination with other abstractions in the vicinity. Conclusions from previous studies cannot necessarily be fully relied upon as more recent/further information available may affect and change the conclusions drawn.</p> <p>Whilst this option proposes to operate within the headroom of existing licences, as this is a change to</p>	<p>Further details on this option are provided in our revised dWRMP24.</p>

Reference	Natural England comment	Southern Water Response
	<p>current usage the assessment must determine whether this will lead to potential impacts to protected sites or priority habitats. It cannot be assumed that due to it operating within its licence the current licensed volume is not having an adverse effect. Full environmental assessments will be needed to determine this and licence capping may be necessary if an adverse effect is identified.</p>	
N42	<p>Groundwater: Eastern Yar3 replacement BH (1.5MI/d)</p> <p>Limited details have been provided for this option, there is confusion with the names for this option with differences in the main HRA report to Appendix D (where the screening is presented). Different documentation has been provided to Natural England which seems to confuse this option and the Newchurch LGS option, this should be clarified to ensure the correct option is being screened and referred to throughout the WRMP. We are unable to determine the impact of this option for this reason. The name should also be checked for this option, should it be Eastern Yar and not Eastern Yar and consistency throughout the documentation (some references to Eastern Yar are also made).</p> <p>Whilst this option proposes to operate within the headroom of existing licences, as this is a change to current usage the assessment must determine whether this will lead to potential impacts to protected sites or priority habitats. It cannot be assumed that due to it operating within its licence the current licensed volume is not having an adverse effect. Full environmental assessments will be needed to determine this and licence capping may be necessary if an adverse effect is identified.</p> <p>Due to lack of information and inconsistencies, Natural England does not agree with the HRA conclusions. Further clarity on the option is needed and more</p>	<p>Further details on this option are provided in our revised dWRMP24.</p>

Reference	Natural England comment	Southern Water Response
	<p>detailed assessment. The same applies for the Newchurch LGS option.</p>	
N42	<p>Groundwater: Newchurch LGS (1.9MI/d) This option proposes replacing all three Lower Greensand boreholes on site so that the source can operate to its licensed capacity. Currently BH4 is non-operational, BH1 and BH2 are operational but at reduced capacity due to screen-dewatering. No additional treatment is proposed. The scheme output is 4.5MI/d. It is unclear from the details provided what the full DO of this scheme will be, in some places it is referred to as 4.5MI/d and others 1.9MI/d. Limited details have been provided and impacts are uncertain, therefore further ecological assessments are required. The screening for this option seems limited, and only includes the Solent and Southampton Water SPA, Ramsar. Several other Habitats sites are within vicinity and some of which may have likely pathways for impact which needs including in the screening, such as the Solent and Isle of Wight Lagoon SAC, The Solent and Dorset Coast SPA, Solent Maritime SAC, and the South Wight Maritime SAC.</p> <p>In some documents provided to Natural England there seems to be some confusion between this option and the Eastern Yar3 option.</p> <p>Whilst this option proposes to operate within the headroom of existing licences, as this is a change to current usage the assessment must determine whether this will lead to potential impacts to protected sites or priority habitats. It cannot be assumed that due to it operating within its licence the current licensed volume is not having an adverse effect. It is noted (on page 137) that further information and assessments will be undertaken for the Environment Agency abstraction licensing processes. At this stage,</p>	<p>We have provided further details on this option in our revised dWRMP24 and clearly differentiate between the total DO of the source and the DO benefit resulting from this enhancement.</p>

Reference	Natural England comment	Southern Water Response
	<p>no adverse effects can be concluded. Full environmental assessments will be needed to determine this and licence capping may be necessary if an adverse effect is identified.</p>	
N43	<p>Import from Portsmouth Water (9MI/d) For this option, it is unclear whether the River Itchen SAC has been screened in. The description alludes to the River Itchen SAC being crossed by this option. Without a more detailed assessment and site assessments it cannot be determined if the River Itchen SAC will be impacted. A more detailed project level HRA will also be needed to determine the risk to the River Itchen SAC, when this option is investigated in more detail. The operation also remains uncertain at this stage based on the information provided, more clarity is required.</p> <p>The in-combination impacts of this option with other pipeline crossings of the River Itchen SAC will need to be considered at the plan level, and further details provided at the project level assessment. Natural England requested these in-combination assessments during the WRMP19 public consultation and also through the RAPID process, this information is required. There should also be discussions with the project teams working on these options to ensure WRMP assessments are updated with current information and that conclusions are consistent.</p>	<p>This option has been excluded from the revised dWRMP24 as Portsmouth Water can no longer provide the supply.</p>
N44	<p>Import from Portsmouth Water (21MI/d) The River Itchen SAC should be screened in the assessment for the construction phase of this option, currently it is not clear this is the case (wording states: 'Therefore screened in?'). It is unclear at this stage if the pipeline crossings will impact the River Itchen SAC, Natural England currently have concerns about these crossings and the impact to the River Itchen (this is currently being discussed with the project team). Impacts to the River Itchen SAC are uncertain,</p>	<p>We are engaging with Natural England on WRMP19 deliverables in the Western area and will continue to do so as these projects progress.</p>

Reference	Natural England comment	Southern Water Response
	<p>and the in combination impacts of this option with other pipeline crossings of the River Itchen SAC will need to be considered. Natural England requested these in-combination assessment during the WRMP19 public consultation and also through the RAPID process. There should also be discussions with the project teams working on these options to ensure WRMP assessments are updated with current information and that conclusions are consistent.</p>	
N45	<p>Otterbourne to PWC Source A: 45MI/d Limited details have been provided in identifying impacts to the River Itchen SAC in the stage 1 screening, impacts could occur from the construction of this option. Added text should be included to clarify this site has been screened in. Natural England would agree that there are no pathways operationally for impacts to the Solent protected sites, but uncertainties remain to the River Itchen SAC due to the lack of detail. Further environmental assessments are required.</p>	<p>This option has been proposed by Portsmouth Water. It is currently in its early stages of inception. We would expect Portsmouth Water, as the beneficiary company, to lead on it.</p>
N46	<p>Treatment capacity: Upgrade Otterbourne WSW (30MI/d) Limited details have been provided for this option and some uncertainties remain. The River Itchen SAC and the Solent Habitats sites have been taken to appropriate assessment for the construction phase, but uncertainties remain of the operational impacts of this scheme. Further assessment should be undertaken to determine the full environmental impacts of this scheme at the operational phase. It is unclear why the Solent Maritime SAC has not been screened in for this option, this site is downstream of the option. There is no information provided to determine whether there is a pathway for impact. It is also unclear from the information provided if this option requires any pipeline crossings of the River Itchen. If this is the case, this will need to be assessed</p>	<p>This option has been excluded from the revised dWRMP24 as it is no longer needed.</p>

Reference	Natural England comment	Southern Water Response
	<p>in-combination with other pipelines crossings proposed in the River Itchen catchment.</p> <p>Whilst this option proposes to operate within the headroom of existing licences, as this is a change to current usage the assessment must determine whether this will lead to potential impacts to protected sites or priority habitats. It cannot be assumed that due to it operating within its licence the current licensed volume is not having an adverse effect. Full environmental assessments will be needed to determine this and licence capping may be necessary if an adverse effect is identified.</p>	
N47	<p>Treatment capacity: Upgrade Test Surface Water WSW (60MI/d)</p> <p>Limited details have been provided for this option, which makes it hard to determine if there will be a construction or operational impact. Further details should be provided. Operation is likely to be able to avoid an adverse effect on integrity of the Habitats sites screened in the HRA, if situated correctly as it is located upstream of these designations.</p>	<p>This option has been excluded from the revised dWRMP24 as it is no longer needed.</p>
N48	<p>Drought option: Candover Drought Permit/Order (2027-2029 only) (15.4MI/d)</p> <p>It is unclear how this option has been deemed to have no adverse effect on integrity of the River Itchen SAC. This option has gone to IROPI and compensatory habitat in the Drought Plan due to its impacts to the River Itchen SAC, this needs to be reflected in the WRMP. This option cannot conclude no adverse effect on integrity to the River Itchen SAC. The HRA for the WRMP and Drought Plan must be consistent for options that are the same.</p> <p>The planning application currently being drafted for the temporary pipeline for this option also does not seem to be reflected in the HRA screening. Some of the Solent protected sites are deemed to be impacted by</p>	<p>We acknowledge that Natural England has not yet reviewed the updated draft of our drought plan HRA and cannot therefore confirm whether it agrees with the conclusions. We will share a summary of the drought plan HRA findings with Natural England and the EA once it is complete and will continue to work with both regulators to finalise our 2022 drought plan. However, we can confirm the Candover drought order assessment recognises the conclusion drawn in forming the Section 20 Agreement, with its associated mitigation and compensatory commitments.</p>

Reference	Natural England comment	Southern Water Response
	<p>this option either alone or in-combination, this must be factored into the conclusions for this option and from the Drought Plan HRA. Please note Natural England has not reviewed the updated draft of the Drought Plan HRA, so cannot confirm at this stage if we agree with the conclusions drawn for this option.</p>	
N49	<p>Bulk imports – both continuation of existing imports and new transfers from Portsmouth Water and Thames Water.</p> <p>Limited details on these options have been provided. If these options require any new infrastructure, discussions with Natural England are required at the earliest opportunity to avoid environmental impact. If any new infrastructure is required, each option should also be screened in the HRA and SEA. For clarity if no new infrastructure is needed and there are no other material changes to the existing imports this should be stated in the WRMP.</p>	<p>T2ST option had the environmental assessments done as part of RAPID Gate 2 submission.</p> <p>Continuation of existing transfers does not require any new infrastructure as no increase in current bulk volumes is proposed. We will clarify this in the revised dWRMP24.</p>
N50	<p>Internal transfers</p> <p>There are several internal transfers, including but not limited to; Sandy Lane Abbotswood (HSEHRZ) (1.1MI/d), HWZ to Otterbourne (120) Potable – Construction and HWZ to Otterbourne (50) Potable – Construction. Natural England has had no engagement on these to date, so it is unclear if these options are subject to material change and/or involve new infrastructure. If these do, these should be discussed with Natural England at the earliest opportunity to avoid environmental impact. If any new infrastructure is needed, they should also be screened in the HRA and SEA. For clarity if no new infrastructure is needed and there are no other material changes to the existing imports this should be stated in the WRMP.</p>	<p>These internal transfers involve enhancements/refurbishment to existing assets. We will clarify that in the revised dWRMP24.</p>
Central Area Strategy		

Reference	Natural England comment	Southern Water Response
N51	<p>Recycling at Littlehampton Water Treatment Works</p> <p>This option is referred to as different names. This should be updated so the name is consistent.</p> <p>Natural England have provided previous comments on this option during the WRMP19 public consultation. There has been some engagement since with the project team on this option, however further engagement is required. This option has the potential to impact several protected sites within the Arun Valley. Construction of a pipeline in the Arun Valley protected area is anticipated, this should be avoided where possible.</p> <p>Considering the timelines for delivery and the reliance on this option as an alternative solution to be delivered, as the case with other options proposed in the area (due to current and further potential deficits that may arise in order to remove the known adverse effect on integrity of the Arun Valley Habitats sites from Southern Water’s groundwater abstraction and subsequent water neutrality obligations), the environmental assessment should be fully completed within this dWRMP. This option should also be linked in the HRA as an alternative supply option supporting the measures to remove adverse effects from the existing groundwater abstraction (as detailed above and within our HRA comments in section 1.1 of this letter). This applies to any options detailed where this is the case.</p>	<p>The comments are noted. Environmental studies, surveys and investigations are currently being planned and procured. We will engage with the EA and Natural England as we progress work on this option.</p>

Reference	Natural England comment	Southern Water Response
N52	<p>Recycling: Horsham WTW conjunctive use with Arun Reservoir, Pulborough (6.8MI/d)</p> <p>There are limited details provided on this option to date. This option has the potential to impact several protected sites within the Arun Valley. Construction of a pipeline in the Arun Valley protected area is anticipated, this should be avoided where possible. It has been deemed that an adverse effect can be mitigated. Further detailed assessment is required, and conclusions will need to be justified with evidence. The Arun Valley Habitats sites have deteriorated in condition where there is a current known adverse effect on integrity from groundwater abstraction, and other water related impacts which are all likely to be significantly contributing towards this decline. Designated site condition, risk to resilience and supporting long-term environmental improvement/restoration (rather than inhibiting) must be considered in the assessment of any options that could affect these sites.</p> <p>This option is likely to act in-combination with other schemes proposed in this plan and also Drought Plan orders/permits that affect this river catchment (Southern Water and Portsmouth Water options). Detailed in-combination assessment must be carried out to identify the potential impacts as currently this does not appear to have been assessed appropriately.</p> <p>The option is named differently in the SEA to the HRA, this should be consistent. This option has been deemed as neutral in the SEA scoping for both biodiversity and soils objectives, which does not fit with the conclusions for this option in the HRA. Water quality has been deemed to be a minor negative impact in the SEA, these conclusions should be reviewed in conjunction with those in the HRA and amended as appropriate.</p>	<p>We have ensured that all option names are used consistently in revised dWRMP24 documentation. We will engage with the EA and Natural England once the need for this option and the year of first utilisation is confirmed in the revised dWRMP24.</p>

Reference	Natural England comment	Southern Water Response
	<p>Natural England is pleased to see the acknowledgment that further data is needed to determine the interactions between the wetland with the river, as this will determine if this is a viable option and the level of environmental impact that could occur. At this stage without this data, an adverse effect on integrity to the Arun Valley Habitats sites cannot be ruled out with any certainty. Natural England advise alternatives to this scheme are identified at an early stage in case this scheme is not deemed viable.</p>	
N53	<p>Groundwater: Rye Wells reconfiguration (1.5MI/d) Limited details have been provided for this option, so the environmental impacts remain unclear. Further environmental assessment is required. Dungeness, Romney Marsh and Rye Bay SPA and Ramsar have been taken to stage 2, but Dungeness SAC has not been included in the screening, this site is likely to be in the vicinity of this option based on the information provided and therefore should be screened in the HRA. It is possible this is out of the zone of influence, but this requires justification and more detail.</p> <p>Whilst this option proposes to operate within the headroom of existing licences, as this is a change to current usage the assessment must determine whether this will lead to potential impacts to protected sites or priority habitats. It cannot be assumed that due to it operating within its licence the current licensed volume is not having an adverse effect. Full environmental assessments will be needed to determine this and licence capping may be necessary if an adverse effect is identified.</p>	<p>We will carry out full environmental assessment of this option once the need and first year of utilisation is confirmed in the revised dWRMP24. We will engage with Natural England at an early stage as we progress this option.</p>

Reference	Natural England comment	Southern Water Response
N54	<p>Groundwater: Petworth WSW return to service with a new borehole (4.0MI/d)</p> <p>Limited details have been provided about this option and hydrological assessments will be needed to determine the impacts of this scheme as these remain uncertain. Construction of a pipeline in the Arun Valley protected area is anticipated, this should be avoided where possible. It has been deemed that an adverse effect can be mitigated. Further detailed assessment is required to confirm this. Natural England should also be engaged at an early stage, with details of the pipeline routes provided. Significant negative construction effects have been identified in the SEA for this option, if these impact on biodiversity, water, or soil, etc these will need appropriate mitigation. The SEA scoping only identifies a neutral impact on biodiversity for the construction phase and a minor for the operation phase, these conclusions do not seem to match the uncertainty in the HRA for this option. This option is referred to as its alternative name in Appendix D of the HRA, the naming should be consistent between documents. The in-combination assessment for this option should be reviewed, along with other options which could impact the Arun Valley Habitats sites as it this stage it is unclear if this has been fully assessed.</p> <p>Whilst this option proposes to operate within the headroom of existing licences, as this is a change to current usage the assessment must determine whether this will lead to potential impacts to protected sites or priority habitats. It cannot be assumed that due to it operating within its licence the current licensed volume is not having an adverse effect. Full environmental assessments will be needed to determine this and licence capping may be necessary if an adverse effect is identified.</p>	<p>We have ensured that all option names are used consistently in revised dWRMP24 documentation. We will carry out full environmental assessment of this option once the need and first year of utilisation is confirmed in the revised dWRMP24. We will engage with Natural England at an early stage as we progress this option.</p>

Reference	Natural England comment	Southern Water Response
N55	<p>Recycling: Horsham WTW conjunctive use with Arun Reservoir, Pulborough (6.8MI/d)</p> <p>Limited details have been provided for this option to date, this option is proposed from 2055. This option has the potential to impact protected sites within the Arun Valley from both a construction and an operational perspective. With the uncertainties that remain around the HRA stage 2 conclusions for the operation phase of this scheme, further assessments will be needed to ensure impacts are avoided or can be removed as the scheme progresses. References should also be provided for the text around the conclusions drawn for the river and its functional linkage to the Arun Valley protected sites. The Arun Valley Habitats sites have deteriorated in condition where there is a current known adverse effect on integrity from groundwater abstraction, and other water-related impacts which are all likely to be significantly contributing towards this decline. Designated site condition, risk to resilience and supporting long-term environmental improvement/restoration (rather than inhibiting) must be considered in the assessment of any options that could affect these sites.</p> <p>This option is likely to act in-combination with other schemes proposed in this plan and potentially also Drought Plan orders/ permits that affect this river catchment (Southern Water and Portsmouth Water options) if still required. Detailed in-combination assessment must be carried out to identify the potential impacts as currently this does not appear to have been assessed appropriately.</p> <p>Further engagement is needed with Natural England on this option. It is acknowledged this is for delivery later in the plan so detailed engagement is unlikely to occur at this stage. However, Natural England expects full assessment to be undertaken well in advance of the proposed delivery timeline. Natural England advise</p>	Please see our response to N52.

Reference	Natural England comment	Southern Water Response
	that this is reflected in the environmental assessments and preferably includes a timeline of how this will be achieved as soon as practicably possible.	
N56	<p>Desalination: Tidal River Arun (10MI/d) Limited details have been provided for this option. Previous versions of this scheme, as outlined during the WRMP19 public consultation by Natural England, show that this option could impact Climping Beach SSSI, with the abstraction point being upstream of this site. Further engagement is needed with Natural England on this option. Our previous comments on this option should also be taken on board when progressing this option. The location of this option is not clear, further detail is required to ensure impacts have been fully assessed and all appropriate designation sites that could be hydrologically linked, such as those protected sites in the Arun Valley (if operationally the impact zone affects the river Arun), have been screened in. This option should also consider impacts to MCZs; it is not clear if this has been fully factored into assessments.</p>	Comments are noted. The earliest start date for this option has been pushed back to 20237-38 to allow sufficient time for investigations and assessments to take place. We will engage with Natural England once the need and earliest utilisation year is confirmed in the revised dWRMP24.
N57	<p>Desalination: Sussex Coast (Modular 0-10MI/d) (10MI/d), (Modular 10-20MI/d) (10MI/d), (Modular 10-20MI/d) (40MI/d) A lot of uncertainties remain with this option to date, from more recent discussions this option requires significant re-assessment for alternative options as it is unlikely to be viable. Similar to comments above (for the recycling at Littlehampton option), considering the timelines for delivery and the reliance on this option further details and assessments are required to be completed within this dWRMP. It is unclear (and of concern) as to whether the 2028 year of implementation for phase 1 of this scheme is realistic, based on the potential environmental risks, the outstanding work needed for this scheme and the lack of detail regarding the option itself. Natural England provided comments on this option at WRMP19, but the</p>	This option has been excluded from the revised dWRMP24.

Reference	Natural England comment	Southern Water Response
	criteria has since changed. The new location/option for this site should avoid protected habitats and sites including MCZs. Further engagement with Natural England is needed for this option at an early stage.	
N58	<p>River Adur Offline Reservoir</p> <p>This option is referred to as its alternative name in appendix D of the HRA, this should be consistent between documents. This option has currently been screened out at stage 1 of the HRA. Limited details are known about this option to date, so Natural England cannot confirm if we agree with HRA conclusions until further information is provided.</p>	We have ensured that all option names are used consistently in revised dWRMP24 documentation. The earliest start date for this option has been pushed back to 2039-40 to allow sufficient time for investigations and assessments.
N59	<p>Pulborough groundwater option</p> <p>This option is mentioned on page 15 of the HRA, but it is not clear if this has been screened in the HRA, if it has it is under a different name. Please check and confirm if this has been screened. Due to the lack of detail, we are unable to make any further comment at this stage</p>	We have ensured that all option names are used consistently in revised dWRMP24 documentation. Further detail will be provided on this option in our revised dWRMP24.
N60	<p>Western Rother licence change and water storage</p> <p>This option is mentioned on page 15 of the HRA, but it is not clear if this has been screened in the HRA, it has it is under a different name. Please check and confirm if this has been screened. Due to the lack of detail, we are unable to make any further comment at this stage.</p>	We have confirmed this in the revised dWRMP24.
N61	<p>Havant Thicket to Pulborough WTW: 50Ml/d</p> <p>This option does not appear in the technical report or if it does it is under a different name. Limited details are provided on this option. This option has been screened in the HRA and SEA. The HRA concludes no operation impacts but the potential for construction impacts subject to mitigation. Construction impacts should be avoidable if the pipeline route avoids the designated area and appropriate mitigation is put in place. Due to the lack of detail, we are unable to make any further comment at this stage</p>	The comment is noted. We have ensured that all option names are used consistently in revised dWRMP24 documentation. Further detail will be provided on this option in our revised dWRMP24.

Reference	Natural England comment	Southern Water Response
N62	<p>Bulk transfers – both continuation of existing import and new transfer from Portsmouth Water, SES Water and South East Water</p> <p>Limited details on these options have been provided. If these require any new infrastructure and/or are subject to material change, these should be discussed with Natural England at the earliest opportunity to avoid environmental impact. If any new infrastructure is needed, they should also be screened in the HRA and SEA. For clarity if no new infrastructure is needed this should be stated in the WRMP. Due to the lack of detail, we are unable to make any further comment at this stage.</p>	<p>The comment is noted. We will engage with Natural England as we develop these options further once their need and earliest start dates are confirmed in the revised dWRMP24.</p>
N63	<p>Transfer: Winter transfer stage 1 - Provision of a permanent sludge treatment facility at Pulborough WSW (2MI/d)</p> <p>Limited details are known about this option, it has been screened in the SEA and HRA. The HRA concluded no likely significant effect at stage 1. Based on the information available and the distance from any Habitats sites Natural England would agree the risk to these sites is low. Further investigations will be required. Due to the lack of detail, we are unable to make any further comment at this stage.</p>	<p>The comment is noted. We will engage with Natural England further as we develop this option further.</p>
N64	<p>Tilmore to Pulborough: 10MI/d</p> <p>Limited details have been provided for this option. Pipelines cross/are in the vicinity of several protected sites such as those within the Arun Valley, further engagement with Natural England is needed. The SEA concludes moderate negative impacts on biodiversity for this option, the pipeline routes should avoid protected sites where possible and suitable mitigation identified. The pipeline route for this option should be reviewed to determine if the impact on biodiversity can be minimised. Due to the lack of detail, we are unable to make any further comment at this stage.</p>	<p>The comment is noted. We will engage with Natural England further as we develop this option further.</p>

Reference	Natural England comment	Southern Water Response
N65	<p>Outwood To Turners Hill: 10MI/d Limited details have been provided for this option; it has currently been screened out at stage 1 of the HRA. With the information provided on this option it is likely to be relatively low risk, further engagement is however still required with Natural England. Pipelines should avoid protected sites and priority habitat where possible and mitigation used/proposed where necessary. Due to the lack of detail, we are unable to make any further comment at this stage.</p>	<p>The comment is noted. We will engage with Natural England further as we develop this option further.</p>
N66	<p>Pulborough to Worthing: 30MI/d Limited details have been provided on this option. Moderate negative construction impacts have been identified for this option in the SEA, these should be avoided where possible and suitable mitigation proposed to avoid impacts. The HRA screening indicates an adverse effect on integrity can be avoided for this option with mitigation. Pipelines cross/are in the vicinity of several protected sites such as those within the Arun Valley, further engagement with Natural England is needed. Due to the lack of detail, we are unable to make any further comment at this stage.</p>	<p>The comment is noted. We will engage with Natural England further as we develop this option further.</p>
N67	<p>Culham (120) - potable – Construction/ Culham (50) - potable – Construction It is unclear why this option has not been subject to HRA screening, if it relates to the Thames to Southern Transfer, or why the Thames to Southern Transfer itself has not been subject to HRA screening. Due to the lack of detail, we are unable to make any further comment at this stage.</p>	<p>HRA and other environmental assessments of the preferred T2ST options were carried out at Gate 2 of RAPID process.</p>
Eastern Area Strategy		

Reference	Natural England comment	Southern Water Response
N68	<p>Recycling: Sittingbourne industrial reuse (7.5MI/d) Limited details have been provided for this option. Discharging of the brine to Milton Creek would likely not be acceptable if this is what is being proposed. This is due to the tidal dispersal within the creek which could result in significant environmental impact. The brine discharge does not seem to have been appropriately considered in the screening and/or the potential impacts have been underestimated. The conclusions drawn lack evidence to support them, so uncertainty remains at this stage. The discharge from this option would also need to be considered in-combination with those of the proposed desalination plant options within Southern Water’s plan but also in other water company plans such as South East Water’s dWRMP. Depending on the location and dispersion of the brine discharge, the Medway Estuary and Marshes SPA and Ramsar sites could be impacted by the operation of this scheme. Not enough information is available to screen these sites out at this stage. Further details and environmental assessment are required.</p>	<p>We have had an initial meeting with the site owners. We will provide further clarity on this option in our revised dWRMP24.</p>
N69	<p>Recycling: Medway WwTW (12.8MI/d) Natural England has had some engagement on this option and is in discussions with the project team. Further information on the project design etc is needed. The brine discharge does not seem to have been accounted for in the screening, it is unclear from the information provided where the discharge will be located. Discharging of the brine into the river Medway or its estuary could have a significant environmental impact due to; the freshwater nature of the site, the lack of tidal dispersal within the estuary and the resident time within the site.</p> <p>At this stage, with limited information and modelling available for this option it is unclear which protected sites could be impacted. Further assessment is required to ensure all designated sites within the zone</p>	<p>The comments are noted and we will take them into account as we progress with this option.</p>

Reference	Natural England comment	Southern Water Response
	<p>of influence have been screened in. If the options remain the same as that proposed at WRMP19, the Habitats sites are some distance further downstream of the discharge points, so the direct risks to Habitats sites are lower, but the potential cumulative/in-combination impacts still need to be considered. Impacts to the Medway Estuary and Marshes SPA and Ramsar have been screened out at stage 2. These conclusions lack evidence to support them and therefore there is uncertainty remaining at this stage. Other designated sites may be impacted when further modelling is undertaken. The operational discharge of this option would also need to be considered in combination with those of the proposed desalination plant options within Southern Water's plan, but also other water company plans such as South East Water's dWRMP. Further details and full environmental assessment are required.</p>	
N70	<p>Recycling: Hastings WTW to augment storage in Darwell reservoir (9.5MI/d) Limited details have been provided for this option. The HRA screening does not seem to have considered the brine discharge in the operation assessment. It is unclear how the discharge from the WwTW would remain the same with the details provided. This option is referred to as different name in appendix D of the HRA. The SEA refers to this option as a 10MI/d option, but the HRA refers to it as 9.5MI/d. Due to the lack of detail, we are unable to make any further comment at this stage.</p>	<p>The comments are noted. We have ensured that all option names are used consistently in revised dWRMP24 documentation.</p>
N71	<p>Recycling: Tunbridge Wells WTW conjunctive use with Bewl reservoir (3.6MI/d) Limited details are currently available for this option and the likely pipeline routes associated with it. It is noted by Natural England that this option has been screened out at stage 1 of the HRA. Based on the information currently available, this option seems relatively low risk to Habitats sites. Further detailed assessments will be required to confirm these</p>	<p>The comments are noted. We will carry out further work once the need and the start date is confirmed in the revised dWRMP24. We will engage with Natural England at an early stage.</p>

Reference	Natural England comment	Southern Water Response
	<p>conclusions. It is noted moderate negative construction effects have been identified in the SEA, where biodiversity has been identified as a minor negative effect, further evidence is needed to determine full biodiversity impacts. Please note the comment in the SEA section about biodiversity impacts needing to be major.</p>	
N72	<p>Desalination: East Thanet coast & transfer (10MI/d), Phase 2 and Desalination: East Thanet coast & transfer (20MI/d) and phase 2</p> <p>Phase 1 for the 10MI/d option does not appear to have been screened in the HRA, this must be added. Limited information is available on this option to date. Further details, modelling and environmental assessments are required. The further modelling should include that of the saline plume, until this modelling is completed fully justified conclusions of environmental impacts cannot be drawn. This option has the potential to impact several protected sites alone and in-combination with other similar options, including but not limited to the other desalination options proposed in the Reginal Plan across other water company dWRMPs. Natural England do not agree fully with the conclusions currently drawn for this option in the HRA. It is Natural England's view that due to the uncertainties that remain around this option adverse effect on integrity cannot be ruled out at this stage either alone or in-combination. The in-combination impact is most likely at the operational stage. It is unclear how it can be concluded for the biodiversity objective in the SEA that the environmental impact is moderately negative at this stage, it is Natural England's opinion that this should be a major negative impact.</p> <p>Natural England has provided detailed advice to Southern Water on the WRMP19 Southampton West desalination option, this site has some similarities to</p>	<p>The comments are noted as is the reference to Natural England feedback on Southampton West desalination option. We will take these into account when progress work on this option.</p>

Reference	Natural England comment	Southern Water Response
	<p>this one. That advice should be taken on board when progressing this option.</p>	
<p>N73</p>	<p>Desalination: River Thames estuary (10MI/d) and phase 2 and: Desalination: River Thames estuary (20MI/d) and phase 2</p> <p>Limited information is available on this option to date. Further details, modelling and environmental assessments are required. The further modelling should include that of the saline plume, until this modelling is completed fully justified conclusions of environmental impacts cannot be drawn. This option has the potential to impact several protected sites including but not limited to the Thames Estuary and Marshes SPA and Ramsar. Natural England do not agree fully with the conclusions currently drawn for this option in the HRA. The discharge from this option would also need to be considered in-combination with those of the proposed desalination plant options within Southern Water's plan but also in other water company plans such as South East Water's dWRMP, as well as the Thames Water desalination plant already in situ.</p> <p>The same risks apply to both the 10MI/d and the 20MI/d plant, but greater environmental impact could occur from the 20MI/d plant. Depending on the results of modelling, further sites such as the Benfleet and Southend Marshes SPA might need to be screened into the HRA as this site is downstream of the proposed scheme. As a precautionary approach these could be screened in subject to the modelling being undertaken. It is unclear how it can be concluded for the biodiversity objective in the SEA that the environmental impact is moderately negative at this stage, it is Natural England's opinion that this should be a major negative impact. This option is not clearly labelled in the SEA as uses a code only, this makes it hard to follow.</p>	<p>The comments are noted as is the reference to Natural England feedback on Southampton West desalination option. We will take these into account when progress work on this option. We will ensure that this option is named consistently in all revised dWRMP24 documentation.</p>

Reference	Natural England comment	Southern Water Response
	<p>Natural England has provided detailed advice to Southern Water on the WRMP19 Southampton West desalination option, this site has some similarities to this one. That advice should be taken on board when progressing this option.</p>	
<p>N74</p>	<p>Desalination: Isle of Sheppey (10MI/d), (20MI/d) and (20MI/d) phase 2 As indicated by the number of sites included in the stage 1 screening, this discharge/operation is in a highly environmentally sensitive area. It is unclear at this stage with the information provided what the potential impacts to these protected sites are, but it is Natural England opinion that this poses a high risk to the interest features of many designated sites. For that reason, it is unclear at this stage how this option will be able to conclude no adverse effect on integrity.</p> <p>This option will also need to be considered in-combination with the other proposed desalination options in Southern Waters plan, but also in other water company plans such as South East Water's dWRMP. This scheme also has the potential to impact Margate and Long Sands SAC, Thanet Coast and Sandwich Bay, SPA and Ramsar and Tankerton Slopes and Swalecliffe SAC either alone or in-combination with the other desalination options proposed. These sites have not been included in the screening.</p> <p>The comments raised apply to both the 10MI/d and the 20MI/d options, the 20ml/d option will produce more brine so will have a greater impact alone and in-combination. It is unclear why the screening criteria for LSE is different for the 10MI/d and the 20MI/d options, these both pose a risk to the environment and should both be classified the same, taking a precautionary approach given the level of uncertainty. It is unclear</p>	<p>The comments are noted as is the reference to Natural England feedback on Southampton West desalination option. We will take these into account when progress work on this option.</p>

Reference	Natural England comment	Southern Water Response
	<p>how it can be concluded for the biodiversity objective in the SEA that the environmental impact is a minor negative impact at this stage, it is Natural England's opinion that this should be a major negative impact.</p> <p>Natural England has provided detailed advice to Southern Water on the WRMP19 Southampton West desalination option, this site has some similarities to this one. That advice should be taken on board when progressing this option.</p>	
N75	<p>Recommissioning of Gravesend groundwater source</p> <p>Limited details are available regarding this option to date. Further details of where this option is located should be provided and a consistent naming approach is needed (Appendix D refers to an alternative name for this option and the location is not clear from the information presented). This option has concluded no likely significant effect at stage 1 of the HRA, however, due to the lack of information provided for this option uncertainties remain. Dungeness SAC and Dungeness, Romney Marsh and Rye Bay Ramsar should also be screened in the HRA if within the vicinity of this option. Further details and environmental assessment are required to address the uncertainties around this option.</p> <p>Whilst this option proposes to operate within the headroom of existing licences, as this is a change to current usage the assessment must determine whether this will lead to potential impacts to protected sites or priority habitats. It cannot be assumed that due to it operating within its licence the current licensed volume is not having an adverse effect. Full environmental assessments will be needed to determine this and licence capping may be necessary if an adverse effect is identified.</p>	<p>The comments are noted and will be taken into account as work progresses on this option. We will ensure that this option is consistently named in all revised dWRMP24 documentation.</p>

Reference	Natural England comment	Southern Water Response
N76	<p>Reconfiguration of Rye groundwater source Limited details are known about this option to date, further environmental assessments are required. The construction impacts can likely be mitigated due to the distance of the designated sites to this option, so Natural England would generally concur with this conclusion at this stage. This option is referred to its alternative name in appendix D of the HRA, this needs to be consistent. Whilst this option proposes to operate within the headroom of existing licences, as this is a change to current usage the assessment must determine whether this will lead to potential impacts to protected sites or priority habitats. It cannot be assumed that due to it operating within its licence the current licensed volume is not having an adverse effect. Full environmental assessments will be needed to determine this and licence capping may be necessary if an adverse effect is identified.</p>	<p>The comments are noted and will be taken into account as work progresses on this option. We will ensure that this option is consistently named in all revised dWRMP24 documentation.</p>
N77	<p>Raising Bewl Reservoir This option involves raising Bewl reservoir by 0.4 metres. Natural England would agree impacts to Habitats sites are likely to be low, based on the details provided to date. Impacts to ancient woodland were however identified at WRMP19, please see Natural England's comments on this option from our WRMP19 response: 'Natural England welcomes the removal of Bewl raising from the preferred plan. This raises the bank height of the existing Bewl Reservoir by 40cm. The SEA notes the need for detailed mitigation measures will be required to protect the ancient woodland surrounding this site during construction.' Ancient woodland cannot be compensated for, given the time taken for this habitat to be formed. Greater consideration of this habitat is required in the environmental assessments.</p> <p>Based on Natural England previous comments on this option it is unclear why biodiversity and landscape have been screened as a minor negative impact in the</p>	<p>The comments are noted and will be taken into account as work progresses on this option.</p>

Reference	Natural England comment	Southern Water Response
	SEA, unless the proposals have been updated since WRMP19, in which case these details need to be added to the WRMP. Further assessment is required.	
N78	<p>Import: South East Water Kingston to KTZ Near Canterbury (2MI/d)</p> <p>Limited details have been provided for this option; Natural England would generally agree the operation impacts to Habitats sites are low, as assessed in the HRA. However, more detailed assessments are needed for the construction impacts to ensure this is the case. The SEA has acknowledged biodiversity impacts from this scheme; these should be appropriately mitigated for. Due to the lack of detail, we are unable to make any further comment at this stage.</p>	The comment is noted and will be taken into account and we progress with this option.
N79	<p>Canterbury (Broad Oak) to Near Canterbury GW</p> <p>Limited details have been provided for this option; Natural England would generally agree the operation impacts to Habitats sites are low, as assessed in the HRA. However, more detailed assessments are needed for the construction impacts to ensure this is the case. The SEA has assessed against the biodiversity objective as minor negative, from a construction point of view. Due to the lack of detail, we are unable to make any further comment at this stage.</p>	The comment is noted and will be taken into account and we progress with this option.
N80	<p>Transfer: KTZ-KME (Faversham4 WSR to KME WSR) 14MI/d and 9MI/d</p> <p>Limited details have been provided for this option, but the environmental impacts to Habitats sites are likely to be low, based on the details provided. This option is referred to as an alternative name in Appendix D of the HRA. This option is also named differently in the SEA and HRA documents. This option has been screened as neutral for all objectives in the SEA, for both construction and operation. With the limited details provided, Natural England cannot confirm if we</p>	The comment is noted and will be taken into account and we progress with this option. We will ensure that the transfer is consistently named in all documents.

Reference	Natural England comment	Southern Water Response
	agree with this conclusion at this stage. Further details and assessment are required.	
N81	<p>Supply side options across Southern Water supply area</p> <p>The following supply side options have not been screened in the HRA as they are deemed to be existing operational transfers (part of the baseline). If any new infrastructure is needed and/or if there has been any material change to these options, these should be screened appropriately in the HRA and SEA:</p> <p>Import from Portsmouth Water to Moor Hill reservoir extension (30MI/d)</p> <p>Import from Portsmouth Water to Moor Hill reservoir (30MI/d))</p> <p>Transfer: Sandy Lane Abbotswood (HSE-HRZ) (1.1MI/d)</p> <p>Transfer: SWZ-SBZ v6 valve (17MI/d)</p> <p>Transfer: SWZ-SBZ additional through v6 valve (13MI/d)</p> <p>Import: PWC to Pulborough (15MI/d)</p> <p>Transfer: Rock Road bi-directional transfer (SWZ-SNZ) (15MI/d)</p>	These are existing transfers. We will engage with Natural England if any new infrastructure is needed.
N82	<p>1.4.3 Natural capital and resilient landscapes and seas</p> <p>Southern Water informed Natural England prior to submission of the dWRMP (noted in Appendix B of the SEA) that a BNG and NCA would be undertaken based on the WRSE Reginal Plan methodology. It is unclear where these assessments have been undertaken as they do not appear to be included in this plan. The main references to BNG and NCA are in the context of the WRSE methodology. These assessments should be undertaken and included as a separate document or an appendix within the dWRMP. If these assessments have not been undertaken, this should be addressed.</p>	Our approach to BNG and NCA aligns with that taken by WRSE as a region. For further details please refer to the WRSE publications available at www.wrse.org.uk

Reference	Natural England comment	Southern Water Response
N83	<p>1.4.4 Connecting people with nature – demand management</p> <p>Natural England strongly encourages Southern Water to retain and continue to work towards the target of 100l/d per person instead of the alternative target proposed of 109l/d. This was a flagship initiative of Southern Water’s WRMP19 and although Natural England understands the challenge of achieving this in all areas, it would be deemed a negative step to not continue with this. There is also a legislative need to drive further reductions in certain WRZs, in providing alternative solutions and lessening impacts on designated sites (as detailed in our HRA comments in section 1.1 of this letter). Continuing to strive to meet this target will also reduce further the water demand in the whole of Southern Water’s supply area which will have a positive impact on the environment and continue to demonstrate Southern Water’s environmental ambition.</p> <p>Natural England is pleased to see the home audits programme is on track for the AMP7 target of 45,000 visits and the future plan from 2025-26 onwards for 10,000 visits a year, based on smart meter data and behavioural science approaches. Natural England is also pleased the home audit programme is being extended into the education sector as part of the non-household initiative, as well as the education programme being commissioned for primary and secondary schools (this does need to clearly demonstrate how the company is achieving both Southern Water’s previous WRMP19 targets and the Water Neutrality obligations in relation to the Arun Valley Habitats sites). Natural England commends the collaborative working with other water companies on this matter.</p> <p>Natural England also commends Southern Water for the smart metering programme in AMP8 for household and non-household customers and this has the</p>	<p>Demand management is a key part of our water resources strategy. We have had to rethink our Target 100 ambition following changes in working patterns a result of COVID-19 whereby a number of workplaces continue to offer flexible or hybrid working. This has an impact on PCC. We aim to achieve the target of 110/h/d under dry year conditions by 2045. This equates to a PCC of 100l/h/d under normal year conditions. We have also tested a scenario that achieves a PCC of 98l/h/d by 2045. We have consequently developed options to meet both targets.</p> <p>Our proposals under both scenarios include increasing household meter penetration to 92% across the company. We also plan to replace our entire existing household meter stock with smart meters by 2030.</p> <p>We have also included a 12% reduction in non-household demand forecast by 2037-38 in line with the EIP and will be engaging with the retailers to promote water efficiency among non-households.</p> <p>For the purpose of developing demand forecast, we have considered total growth in our supply area without splitting them into NAVs and regular Southern Water customers. This is primarily because of the difficulty in forecasting the proportion of future growth that will end in in NAVs. By looking at total growth, we can ensure that we develop enough resources to meet demand across our area.</p> <p>As part of revised dWRMP24, we aim to reduce leakage by 50% by 2050. We have also tested a scenario whereby we reduce leakage by 62% by 2050.</p> <p>We recognise and consider demand management to be an environmentally friendly and sustainable way of maintaining supply-demand balance in the long run. However, we also have to consider the deliverability risk associated with demand management. As we saw during the COVID-19 pandemic, several years of progress made in reducing PCC was eroded in a single year.</p> <p>We have considered this in setting our demand management targets.</p>

Reference	Natural England comment	Southern Water Response
	<p>potential to help reduce water demand leading to positive environmental outcomes. Natural England encourages the company to continue with its metering programme to determine if any of the remaining 12% of customers not currently metered can be metered, and to encourage those users who cannot be metered to use less water and to highlight the importance of this environmentally.</p> <p>Natural England is pleased to see the Catchment First programme continuing and the ambitious nature of this. It is also good to see Southern Water actively engaging with Non-Government Organisations (NGOs) to provide the best outcomes for customers and the environment, as well as working with farmers and Catchment Sensitive Farming Advisers (to reduce pesticide and nutrients from landholdings and to groundwater). Continued engagement and progression of this programme is needed for it to achieve the desired outcomes. Good environmental benefits from this programme are starting to be seen on the ground, for which Natural England would like to commend the company.</p> <p>Southern Water's dWRMP does not seem to take account the bulk transfers from Southern Water to various NAVs in their supply area. These need to be considered in supply demand balances and the environmental impacts assessed with the appropriate options, if not already accounted for. If these assessments have not already been completed, the HRA and SEA should be updated as outlined in those sections of this letter. The assessments for these options should be clearly outlined in the dWRMP and added to the relevant sections (including table 5.8 of the technical report, table 1g of the WRP tables, etc). It is noted that exports to NAVs generally involve small volumes of water, but this still needs accounting for in the plan.</p>	

Reference	Natural England comment	Southern Water Response
	<p>Natural England encourages Southern Water to continue to be ambitious in its leakage reduction programme and to strive to meet the high reduction scenario of 62% by 2050, as this will lessen the environmental impact and the amount of water needed for supply. It is good to see the asset renewal programme in place. This should continuously be reviewed, and other assets added as required.</p> <p>Where there are existing impacts on nature and the ability to recover from water resources impacts, the company should seek significant demand management measures to remove these impacts as soon as possible to support restoration, improvement and resilience. This should not await new supplies options coming online and demand management interventions should be timetabled as early as possible in the plan to meet the objectives, policies and timelines for nature recovery as set out in Annex 2.</p>	

3. Feedback from Ofwat and our responses

Reference	Ofwat comment	Southern Water response
1	<p>Demand management ambition and outcomes The Government's strategic priorities for Ofwat states that reducing demand for water can relieve pressures on water supply and increase our resilience to extreme drought. Water companies must act to reduce demand for water in a way that represents value for money in the long term. We expect all companies to use their WRMPs to show how they will meet long-term water demand targets, including:</p> <ul style="list-style-type: none"> • a 50% reduction in leakage by 2050 from 2017-18 levels; and • reducing per capita consumption (PCC) to 110 litres per head per day (l/h/d) by 2050. <p>A further target is now set in the Environmental Targets (Water) (England) Regulations 2023 for the reduction of potable water supplied by water undertakers in England to people in England. This states that the volume supplied per day per head of population should be at least 20% lower than the 2019-20 baseline by 31 March 2038. We expect companies to demonstrate how they will deliver against this target in their final WRMP.</p> <p>We welcome that Southern Water plans to reduce leakage by 50% from 2017-18 by 2050. We also welcome that Southern Water has set out its intention to meet the PCC target of 110l/h/d by 2050. However, the company's WRMP planning tables do not clearly show this is the case, with a higher dry year annual average (DYAA) PCC presented in 2049-50. The company should revise its planning tables for its final WRMP to reflect the ambition set out in its plan.</p> <p>The company's final WRMP should also reference the target to reduce distribution input by head of population by 20% by 2037-38 and demonstrate how it plans to deliver this through a combination of reductions in the key demand components: leakage, household consumption and non-household consumption.</p>	<p>In our revised dWRMP24, we are aiming to achieve 50% leakage reduction by 2050, reduction in PCC to 110l/h/d by 2045 under dry year conditions and reducing non-household demand by 12% by 2037-38 (compared 2019-20).</p> <p>Our Draft Plan achieved a PCC of 115l/h/d by 2050 under dry year conditions. We have revised our demand management strategy to achieve a dry year PCC of 110l/h/d by 2045 as a minimum. This will be reflected in the revised WRMP planning tables. We have also slightly adjusted our leakage profile to start from our 2021-22 outturn position rather than the 3-year average.</p> <p>If we achieve our target reductions in leakage, PCC and non-household demand then our forecast per capita DI in 2037-38 under normal year conditions will be 22% lower than our 2019-20 reported per capita DI.</p>

Reference	Ofwat comment	Southern Water response
2	<p>Demand reduction strategy</p> <p>We welcome that the company has tested three leakage reduction scenarios of 50%, 55% and 62% to help inform the optimum long-term strategy for meeting the supply-demand balance. However, the company presents the 50% reduction scenario in its preferred plan, reasoning that this is based on Ofwat feedback and aligns with the EA's National Framework for Water Resources. As confirmed in the PR24 final methodology, we expect companies to plan to meet the 50% reduction target as a minimum and that further reductions should be explored. Although the interventions to meet the 62% reduction are presented, together with the costs and demand savings, no comparison is made between the three scenarios, based on costs and demand savings and interaction with supply-side options in the programme, to propose an optimum target reduction. We expect the company to provide sufficient and convincing evidence in its final WRMP to justify why its selected approach to reducing demand (leakage, PCC and business demand) represent the best value approach to meeting a supply-demand balance or delivering long-term strategic outcomes in line with expectations.</p> <p>The company needs to justify why the demand management approach presented in the dWRMP represents a coherent strategy. The lack of testing the profiling of measures and their interaction with supply options means that the programme may be scheduled incorrectly. This includes whether it is optimal to implement a significant amount of mains replacement during 2025-30 while the advanced metering infrastructure (AMI) meters are still being rolled out. The company should provide sufficient and convincing evidence that the strategy fits together as an optimal long-term package, including how it interacts with the supply side programme.</p>	<p>The WRSE investment model does not allow for different combinations of household demand, non-household demand and leakage reductions to be tested separately. The reductions are bundled together into high, medium and low demand management strategies to provide a single demand reduction figure for each strategy. This has been done for operational reasons to reduce the model run times.</p> <p>We have, however, introduced savings from Government interventions separately from water company interventions and have tested different levels of savings and savings profiles from Government interventions. This is discussed in our revised dWRMP24.</p> <p>The output from the investment model can be split into respective demand management components i.e. PCC reduction, non-household demand reduction and leakage reduction. We can provide a £ per MI/d comparison of reduction in these demand components with the preferred supply-side options.</p> <p>We have also tested a scenario whereby PCC under dry year conditions is reduced to 98l/h/d by 2045 and leakage reduced by 62% by 2050.</p> <p>The WRSE investment model does not allow for different combinations of household demand, non-household demand and leakage reductions to be tested separately. The reductions are bundled together into high, medium and low demand management strategies to provide a single demand reduction figure for each strategy. This has been done for operational reasons to reduce the model run times.</p> <p>We have, however, introduced savings from Government interventions separately from water company interventions and have tested different levels of savings and savings profiles from Government interventions. This is discussed in our revised dWRMP24.</p> <p>The output from the investment model can be split into respective demand management components i.e. PCC reduction, non-household demand reduction and leakage reduction. We can provide a £ per MI/d comparison of reduction in these demand components with the preferred supply-side options.</p>

Reference	Ofwat comment	Southern Water response
		<p>When viewed as a whole life cost rather than a short-term AMP period view, mains replacement is a cost-efficient method of maintaining asset condition and preventing deterioration. Our assessment of the amount of mains replacement required to offset leakage deterioration was based on our current deterioration rates and the amount of leakage per section of pipe, from our deterioration model. However, we also recognise that increasing our replacement rate by the level required, in one AMP, will represent a significant challenge and we are reviewing this as part of the PR24 business case. This will result in short term increases in, most likely, 'find and fix' to fill the shortfall in output and deliver the required leakage reduction profile. Continually delaying asset replacement based on a short-term view of cost/benefits will result in increased costs in the medium term due to a deteriorating asset and a lower leakage benefit per km of mains replaced. Maintaining the required leakage levels will also become more challenging due to an increasingly deteriorating asset base. This is not beneficial for the longer term supply-demand balance.</p>
3	<p>Delivery of PR19 performance commitments and WRMP19 targets We are concerned that, based on the dWRMP data tables, the company does not forecast delivery of its PR19 performance commitment levels for leakage and PCC by 2024-25. For PCC the end point in 2024-25 would reflect an increase in PCC from the 2019-20 position. We expect the company to deliver its PR19 and WRMP19 targets. Companies should not expect additional customer funding to address deficits resulting from under delivery in the current or previous periods. We expect the company to review its proposals in these areas for its final WRMP.</p>	<p>We are aiming to hit our AMP7 leakage target. However, we do not expect to achieve our PCC target. Our PCC increased significantly during periods of COVID-19 lockdown. While it has started to come down since the restrictions have been lifted, it remains higher than pre COVID-19 level. It is likely to remain higher than pre pandemic levels over the remainder of this AMP as a part of the workforce continues to work from home for at least part of the week. We have revised our end of AMP7 PCC forecast. The revised PCC forecast is closer to our end of AMP6 position but is higher than our WRMP19 forecast. We are however aiming to achieve the longer term PCC target of 110l/h/d by 2045 under dry year conditions. During the 2020-25 period we are devoting significant levels of resources into promoting water efficiency amongst our customers. For example in 2022-23, we have completed another 8,630 home audits. This, for the first time, included 500 at a housing association. We're on track to deliver 45,000 home visits in AMP7, despite the impact of COVID-19.</p>
4	<p>Business demand Southern Water's dWRMP presents a decreasing trend in absolute non-household consumption levels and levels per head of population from 2019-20 onwards. This represents a 1.7% decrease across the 2025-30 period. We have previously highlighted the opportunity for companies to deliver non-household demand reductions and our expectations for WRMPs are that companies deliver significantly improved levels of water efficiency in the</p>	<p>For the revised dWRMP24, we are aiming to reduced non-household demand by 12% by 2037-38. While the demand is projected to increase thereafter as a result of growth, the forecast demand in 2074-75 is still lower than it was in 2019-20.</p>

Reference	Ofwat comment	Southern Water response
	business sector. We expect the company to clearly justify an ambitious strategy for non-household demand reduction in its final WRMP.	
5	<p>Per capita consumption (PCC)</p> <p>The data provided by the company to date indicates that it is proposing a three-year average PCC reduction over the 2025-30 period that will deliver a level of PCC 0.2% higher than the 2019-20 baseline by 2029-30. We are concerned that this means that PCC will not have changed over a ten-year period. As the company further develops its forecast PCC performance trend from dWRMP to final WRMP it should include the reasons for changes and explain the impact of any revisions on the optimisation and best value option selection in its preferred plan. We expect the company to provide sufficient and convincing evidence in its final WRMP to justify why its selected targets for demand reduction represents the best value approach to meeting a supply-demand balance or delivering long-term strategic outcomes.</p>	<p>The 3-year average figures have been influenced by the high PCC levels during 2020-21 and 2020-22 and the fact that our starting position for AMP8 was much higher than originally forecast in WRMP19. As PCC has started to drop following the lifting of COVID-19 restrictions, we have revised our end of AMP7 PCC forecast. However, it remains higher than originally forecast. We are nevertheless aiming to achieve the long term PCC target of 110l/h/d by 2045 under dry year conditions.</p>
6	<p>Leakage</p> <p>Setting a glidepath to meet optimum long-term targets and outcomes should enable an efficient and deliverable long-term programme to be identified. The company's plan only considers a single leakage profile. The proposed reduction for 2025-30 is only 8.8% compared to 15% to be delivered during 2020-25. The company should present sufficient and convincing evidence of the costs and benefits of a range of profiles and explain more robustly why this profile – rather than doing more or less in the near term – is optimal from a timing of investment perspective. This is particularly important given the company's near-term supply demand deficits, which a faster pace of leakage reduction could help resolve.</p> <p>The range of options for leakage reduction that seem to have been considered include active leakage control, mains replacement, pressure management and metering. However, the plan contains insufficient evidence and disaggregated costs and benefits of activities to fully understand whether these represent best value over the long term. In general, the</p>	<p>Three leakage scenarios were produced for the dWRMP24 which achieved a range of leakage reductions of between 50% and 62% by 2050, in line or exceeding the National Infrastructure Committee (NIC) targets of halving leakage by 2050. This process has been revised for the revised dWRMP24. The revised leakage profile selected still achieves 50% reduction by 2050 but has a higher level of leakage reduction in AMP8 than the Draft Plan profile with a 15% reduction in leakage (compared to the 2017-18 to 2019-20 base leakage level) over the 5 year period, up to 2030.</p> <p>At the time the Leakage Roadmap was published, we had one of the lowest leakage levels (per km and per property) in the industry. The 2030 leakage level in the revised dWRMP24 is now very close to the NIC 2050 industry target and will be close to 10% of DI. Leakage reduction rates will fall after this point and opportunities to deliver benefits without asset investment will reduce.</p> <p>We reviewed 10 options for leakage reduction as part of the planning process. Of these, 3 options were excluded due to the low level of associated benefits that were assessed against them, leaving 7 options that were taken forwards. The benefits and costs associated with these options will be provided as part of the revised dWRMP24.</p>

Reference	Ofwat comment	Southern Water response
	<p>company has not presented enough feasible options, in particular for leakage management, where only the preferred basket of option types is presented in data tables. For many zones the majority of feasible options are selected (e.g. Hampshire Southampton East WRZ 14 of 16 selected) suggesting that not enough feasible options were presented to be optimised. We expect the company to present further granularity for its demand management options, and sufficient and convincing evidence that the number and range of options and the scenarios considered to define them are appropriate and optimal.</p>	<p>The selection of options depended on the nature of leakage benefit, for example, deterioration in the natural rate of rise of leakage was offset by asset renewal, natural rate of rise of leakage was offset by find and fix, and leakage reduction was obtained through smart metering, pressure management and more efficient fix and fix enabled by smart network technologies and models.</p> <p>A more granular commentary is included in the revised dWRMP24.</p>
	<p>The company defines three high level scenarios (high, medium and low) for different leakage option types (for example, fix on fail, advanced pressure management, etc). The company then selects one scenario per option type to form part of its leakage strategy. It is unclear why these scenarios are selected (i.e. the scale of costs and benefits to determine the range between high and low) and why the selected scenario is chosen. Low ambition scenarios are chosen for advanced pressure management and fix on fail that are presented as having low unit costs compared to other option types, and the unit cost does not increase with increasing ambition. This indicates that there is scope to explore these option types more in the near term. Although the company selects the low scenario for mains replacements, it needs to provide more context for why even the low scenario is optimal given the very high unit costs.</p>	<p>The selection of options depended on the nature of leakage benefit, for example, deterioration in the natural rate of rise of leakage was offset by asset renewal, natural rate of rise of leakage was offset by find and fix, and leakage reduction was obtained through smart metering, pressure management and more efficient fix and fix enabled by smart network technologies and models.</p> <p>In addition, options were not purely selected on the basis of leakage reduction alone. This is especially true for mains replacement. Mains replacement increases resilience against weather related events - which had a significant impact on our leakage levels during 2022-23 - as well having a long term impact on supply interruptions and therefore customer impacts. 'Find and fix' may deliver a short term leakage benefit but it does not address resilience and actually creates more supply interruptions.</p> <p>The level of risk selected depended on our confidence of delivering the outputs without putting our ability to achieve the outputs in jeopardy.</p> <p>More detail is included in the revised dWRMP24.</p>
	<p>The company should clarify its proposed programme of leakage activity types for the 2025-30 period as well as the costs and benefits, as those presented in 'Annex 17 – Leakage strategy' do not match the confirmed numbers in table 8 of the WRMP data tables.</p>	<p>We will ensure that our leakage strategy is accurately captured in the WRP tables as described in the revised WRMP24 technical document.</p>
	<p>We expect the company to review its leakage reduction proposals and provide sufficient and convincing evidence it is presenting a best value solution based on efficient activity costs.</p>	<p>We have reviewed our leakage reduction proposals. However, there remains some uncertainty in the leakage options post AMP8. This is partly due to the low level of leakage we will have achieved at this point (ca. 10% of DI), which is forecast to impact the subsequent rate of leakage reduction that is attainable, as well as the unknowns around the additional benefit that smart</p>

Reference	Ofwat comment	Southern Water response
	<p>Southern Water has not discussed its policy with regards to customer supply pipe leakage. We are encouraging companies to evaluate the benefits of a common industry approach to addressing leakage on customers own pipes. We expect companies to provide a view on the benefits of a common industry approach in their statements of response and final WRMPs. We will support companies in the development of a common approach but expect the industry to lead on the development. The Water UK leakage route map to 2050 committed to an informed debate on customer supply pipe strategy by December 2022.</p>	<p>metering and innovative smart network models will deliver. The level of smart metering roll out in AMP8 will materially change our ability to understand and target leakage interventions which will result in more efficient find and fix processes as well as allowing for the optimisation of asset replacement decisions.</p> <p>The planned roll-out of AMI meters during AMP8 will allow us to proactively identify customer-side leakage and internal losses more effectively. The meters will be programmed to generate leak alarms that will notify both the customer and Southern Water of the presence of water loss within 1 to 7 days of the leak occurring (dependant on leak size), significantly reducing the run-time of a leak and the amount of water lost. We are reviewing the options for customer-side leak repairs that will be offered during and after the roll out of these meters. This includes:</p> <ul style="list-style-type: none"> • offering a free repair for any leaks present at the time of meter installation, • maintaining the current process whereby all but vulnerable customers are responsible for their own repairs or offering a free supply pipe repair process (recognising the increase in cost that all customers would incur for implementing this).
7	<p>Metering</p> <p>Southern Water currently plans to increase household meter penetration from 88% to 92% by the end of the 2020-25 period and does not state whether or how this is optimal. The company recommends moving from its current stock of basic meter and automated meter read (AMR) technologies to the smarter AMI functionality. AMI meter penetration is forecast to reach 82% by 2030. Southern Water assumes that greater meter penetration will encourage customer usage to reduce by a further 3-5%. However, it is unclear if this relates to changing from a basic meter or AMR to an AMI meter, or where these percentage usage savings come from.</p>	<p>The increase in meter penetration from 88% to 92% commitment was a demand reduction measure included in WRMP19 for Central and Western areas. Recognising the high meter penetration already achieved in our region, and the complexity of our remaining unmetred estate, we will be delivering this alongside our AMP8 meter replacement programme to drive efficiency.</p> <p>We have assumed that Basic and AMR meters replaced by AMI meters will have the same customer usage reduction. Our AMR meters are read on a twice-yearly basis for the purpose of customer billing. There are no further capabilities being operated at the moment that can support customers to manage or reduce their usage.</p> <p>We have assumed 4% PCC reduction based on the following studies:</p> <ul style="list-style-type: none"> • A 2015 study by Southampton University of our Universal Metering Programme indicated a 16.5% reduction in Customer Demand. • A Frontier Economics report estimated a 5% reduction in demand from Basic or AMR to Smart AMI Meters. • A Water UK & Artesia report that estimated 12-22% progressive smart metering by region.

Reference	Ofwat comment	Southern Water response
	<p>The company has assessed three replacement scenarios to determine its preferred metering programme. These are to replace meters on failure with AMR meters, to replace meters on failure with AMI meters, and to proactively replace meters with AMI during 2025-30 period. The company chooses the proactive replacement AMI strategy based on the delivery costs and costed benefits. However, a wider variety of delivery timescales for AMI should be presented together with sufficient and convincing evidence that this strategy represents optimal investment scheduling over the long term. An AMI roll out over 10 years (rather than the five presented) is necessary to be consistent with our technology common reference scenario. The only other comparison is against different technology types and not roll out times. The choice of strategy is also dependent on costed benefits without any detail on how these are calculated, nor are the usage savings for each strategy presented. The strategy of like for like replacement of AMR meters would be a base activity with no additional enhancement costs to customers which should be factored into decision making.</p> <p>The company presents very high metering unit costs which are calculated to be 14.7 £m/MI/d for the 2025-30 period. This may be the result of low assumed benefits or high meter installation costs or both. The company's plan has AMI installation unit costs (£ per meter) significantly higher than the unit costs allowed at PR19, recent outturn and other companies' dWRMP forecasts. The company also needs to provide sufficient and convincing evidence that the unit costs of its AMI meter installations are efficient.</p>	<p>Therefore a 4% further PCC reduction has been assumed. It is assumed that this is primarily driven by variable use and ability to influence behaviour through access to data and tailored usage advice.</p> <p>We have revised our strategy since publishing dWRMP24. We consider a 5-year replacement cycle to be a key enabler for our water efficiency programme because it unlocks the potential of other options (home audits, awareness and education etc) and implementation of future tariffs; without which the target PCC of 110l/h/d under dry year conditions by 2050 is not achievable. It has also recognised that a 5-year replacement cycle is also critical to replace an ageing meter estate. By the end of 2025, ca. 90% of all AMR meter batteries will have failed, and by 2030 will exceed the mechanical life of the meter, whilst all legacy non-AMR meters (30% of existing meters) will be more than 5 years older than their expected 15-year operational life.</p> <p>The size of the overall programme investment is larger than we will receive via the existing regulatory framework. We are therefore looking at alternative delivery routes that will enable the investment to continue, while providing value for money for customers. We have begun work to identify routes where multiple parts (e.g. installation, maintenance) are outsourced to an alternative provider. This possibility has been mentioned to Ofwat in our Direct Procurement for Customer (DPC) meeting of 3 April 2023 and in our first PR24 engagement meeting with Ofwat on 26 April 2023. Ofwat feedback in the meeting was that it is open to considering smart meters as candidates for the formal DPC process. We will continue to engage with Ofwat and, in the event that either the DPC or the alternative financing route is recommended, we will adjust related PR24 claims to take account of the intended delivery mechanism. This work will also include modelling a 10-year roll out scenario.</p> <p>There is no benefit from like-for-like meter replacement. Therefore we propose that this benchmark should be Enhancement Costs for enabling Smart Metering benefits vs benefits. It should also be expanded to include both PCC and customer-side leakage. Customer-side leakage is not currently included in the calculation of benefit. Using this calculation, our forecast cost of £m per MI/d saved is £2.9m.</p> <p>Our AMI installation unit costs currently assume that a significant volume of replacements will not be simple. We assume that a significant proportion of replacements will require boundary box remediation or replacement due to the age, condition, or dimensions of the boundary box. 42% of all replacements in</p>

Reference	Ofwat comment	Southern Water response
	<p>The interaction between metering options and the PCC glidepath to 2050 is currently not explored. The company should present sufficient and convincing evidence to explain this. The decision-making process identifying how outputs from models and optimisation tools are developed into recommendations for executive team and Board sign off is not clearly explained in the dWRMP. In its final WRMP, the company should provide further detail of this decision-making framework and sufficient and convincing evidence to justify why the preferred metering option is best value from a technology and timing of investment perspective.</p>	<p>2020-21 and 2021-22 were escalated as it was not a simple external screw-out/screw-in replacement. We are commissioning a sample of 20k boundary box surveys to narrow this uncertainty and refine cost assumptions.</p> <p>Our PR24 submissions will contain further comparisons to AMP7 industry meter replacement costs to demonstrate efficient costs.</p> <p>Our water efficiency programme is based on developing a water conscious future by creating awareness and educating our customers (campaigns, education), providing the tools to help with the behaviour change (home audits, smart metering etc.) and incentivising reduced use. Currently, only home audits are the proven way of consumption reduction and quantifiable benefits of the other measures are not fully known; however, we have planned a number of pilots to measure their impacts and refine our plan at WRMP29 with improved efficiencies, if possible.</p> <p>Smart metering is a key enabler for our water efficiency programme unlocks the potential of other options (home audits, awareness and education etc.) and implementation of future tariffs; without which the target PCC of 110l/h/d by 2050 under dry year conditions is unachievable. As such, we have approached the glidepath of the Smart Metering programme based on the PCC reduction requirements set by the household demand reduction programme and guidance from the Water UK (Pathways to long-term PCC reduction report). We have considered two water efficiency scenarios in for WRMP24. These are described in our revised dWRMP24.</p>
8	<p>Assessment of water needs A robust assessment of current and future water needs is critical as it drives the gap between supply and demand and therefore drives the scale of investment required for the 2025-30 period and beyond.</p> <p>The company's supply demand balance starting point for the dWRMP24 is significantly lower than its forecast for the same point in the final WRMP19. The reduction in available water for 2025-26 is equivalent to 47% of company water demand (Distribution Input). Although some of the changes are due to supply-demand balance reporting updates, there is still insufficient evidence to understand changes in some areas. In some areas, the evidence suggests that non-delivery or underperformance is the cause. This includes not meeting</p>	<p>We have revised our supply and demand forecasts. These are described in detail in our revised dWRMP24.</p>

Reference	Ofwat comment	Southern Water response
	<p>expected WRMP19 PCC levels, non-delivery or delayed progress of PR19 funded schemes, reducing works outputs, and an increased outage allowance. This means that there are significant concerns whether the overall outcome of the WRMP19 as funded at PR19 has been delivered in the round. The company should fully quantify and justify the reasoning for changes between WRMP19 and the starting point for WRMP24 at a supply-demand balance component level with sufficient and convincing evidence.</p>	
	<p>There are points from Ofwat's pre-consultation feedback in 2022 that have not been appropriately or fully addressed in the dWRMP. This includes not being clear whether the benefits of funded schemes are incorporated as options rather than being incorporated into the baseline. Funded options should be included within the baseline and not re-appraised, as per the WRPG, section 4.8. Southern Water should provide sufficient and convincing evidence that Ofwat's previous concerns on this matter have been addressed by its final WRMP.</p>	<p>None of the WRMP19 funded options have been re-appraised. They are pre-selected the investment model i.e. they are available as per their WRMP19 delivery dates, except in cases where these delivery dates have been revised (Littlehampton WTW recycling, HWTWRP and Havant Thicket Reservoir). The WRSE investment model utilises drought options in preference to the desalination/recycling options as drought options are effectively treated as free water. That is why the WRMP19 options are not fully utilised while drought options are available. In reality all available options will be fully utilised before a drought option is invoked. This is discussed in detail in our revised dWRMP24.</p>
	<p>There is limited evidence provided that the benefits of funded PR19 activities have been appropriately factored into the dWRMP24 baseline supply-demand balance. The intended delivery and progress of PR19 schemes should be consistently presented in the company dWRMP and the 2021-22 annual performance report (APR) and any differences explained. This is particularly important for those schemes contributing to the PR19 long-term supply demand schemes performance commitment and associated reporting. The company should provide granular details of the benefits of funded schemes and how and when these have benefited the baseline supply-demand balance in its final WRMP. Where a step change in supply-demand balance between WRMP19 and WRMP24 is not sufficiently justified as being due to changes to scenarios or planning assumptions, and may instead be as a result of no delivery or underperformance, this will be taken into account at PR24 in the assessment of enhancement funding.</p>	<p>As mentioned above, all WRMP19 funded options are pre-selected and available to the model from their WRMP19 delivery dates, except were revised. They have been included as pre-selected options rather than incorporated in baseline supply-demand balance as it allows sensitivity testing around delivery dates and DO benefits as designs mature.</p>

Reference	Ofwat comment	Southern Water response
	<p>It is important that Southern Water steps up its efforts on WRMP19 supply and demand side options delivery and meeting PR19 commitments ahead of WRMP24. We expect the company to make substantial efforts on demand reduction for the rest of the 2020-2025 price control period to ensure that WRMP19 forecast and PR19 performance commitment targets are met annually, and to set firm foundations for delivering WRMP24.</p>	<p>Our PCC target has been impacted by the change in working patterns as a result of COVID-19. We are aiming to hit the long term target of 110l/h/d by 2050 under dry year conditions and are stepping up our efforts to reduce demand. We are currently aiming to achieve the PCC target in 2045 rather than 2050. One of the measures we are taking in this regard is to replace all existing meters with smart (AMI) meters over a 5-year period during AMP8.</p>
	<p>Southern Water has not provided sufficient evidence for the demand forecast having been produced in line with WRPG. The company should provide supporting information on this and its alignment with the guidelines, e.g. an appendix report (not just figures), as has been done with the deployable output assessment in Annex 8.</p>	<p>We have included the reports by Ovarro and Artesia covering the development of household and non-household demand forecasts for dWRMP24 as annexes to the revised dWRMP24.</p>
	<p>Southern Water presents high level outputs of testing the date to achieving 1-in-500 year drought resilience. It presents the impact on selected schemes in its least cost programme for changing resilience levels from 2040 to 2037 and 2052. The costs of these changes are not presented. We would expect further details in the final WRMP of the different costs of the programme in the short term and long term in non-discounted costs for a significant policy choice. This is important as the scale of impact and importantly the date for achieving it is a key driver for scheduling schemes in the investment programme. This point was raised in the pre-consultation meeting and has yet to be appropriately addressed. It is also unclear whether the company has tested the moving to 1-in-500 year resilience correctly. It states that the results presented show the impact of delaying the termination of supply-side drought options on the least-cost plan. The sensitivity, and optimisation of date, should be based on moving the achievement of resilience to emergency drought orders, not the removal of all supply-side drought options. The choice of the years 2037 and 2052 is not explained, nor is the reason for applying this to the least cost programme only. Southern Water should provide sufficient and convincing evidence to show that it has correctly and robustly tested the sensitivity for the date to meet 1-in-500 year drought resilience, that this has been used to engage</p>	<p>Our dWRMP24 achieved 1-in-500 year resilience in 2040-41 in line with guidance. We have undertaken sensitivity tests to explore the impact of alternative timings to achieving 1-in-500 year drought resilience. This is further discussed in our revised dWRMP24.</p> <p>Sensitivity testing of the timing of cessation of environmental drought permits and orders was carried out in conjunction with WRSE and the above changes to timing of 1-in-500 year drought resilience between 2035, 2040, 2045 and 2050. Across the WRSE companies we also agreed a policy that once we reached the 1-in-500 year drought resilience standard, the use of these drought orders and permits would stop in the following year. This additional year ensures that schemes can be delivered in time to meet the resilience standard, and provides a contingency in the event of a drought in the final year of this period. After 1-in-500 year drought resilience is achieved, drought orders and drought permits will only be used in our plan if we experience a drought more severe than a 1-in-500 year event.</p> <p>We have summarised the cost impacts of these alternative policy strategies for the dWRMP24 in the table below. 2037 and 2052 relate to the cessation of use of supply side drought permits or orders in the following year. Generally these sensitivity runs show that, achieving 1-in-500 resilience earlier than 2040 is less efficient, i.e. more expensive than deferring it until later in the planning period.</p>

Reference	Ofwat comment	Southern Water response				
		Model Run	Description	Year 1-in-500 year resilience achieved	Year cessation of drought permits and orders achieved	Average Reginal Plan cost (across all branches) £m
	with customers, and that this has informed the choice of the date in its final WRMP.	st-hybrid-dy-w1-tree16.05-options-v37-gov-led-hybridb-2075	Least Cost Plan	2040	2042	12,977
		st-hybrid2035-dy-w1-tree16.05-options-v37-gov-led-hybridb-drpo-v4-2075	Achieving 1-in-500 year drought resilience by 2035	2035	2037	13,294
		t-hybrid2035-dy-w1-tree16.05-options-v37-gov-led-hybridc-drpo-v4-2075	Achieving 1-in-500 year drought resilience by 2035 with policy C	2035	2042	12,848
		st-hybrid2045-dy-w1-tree16.05-options-v37-gov-led-hybridb-drpo-v3-2075	Achieving 1-in-500 year drought resilience by 2045	2045	2047	12,251
		st-hybrid2050-dy-w1-tree16.05-options-v37-gov-led-	Achieving 1-in-500 year drought resilience by 2050	2050	2052	12,195

Reference	Ofwat comment	Southern Water response
	<p>The company has a planned level of service for imposing temporary use bans (e.g. hosepipe bans) at a frequency of once every 10 years. For some zones it is not meeting this level of resilience, such as those zones impacted by the current Section 20 Agreement with the Environment Agency. The consequences of this agreement to customers and the environment (including 1-in-5 year hosepipe bans), and how this has been incorporated into the supply-demand balance and the timing for its conclusion should be made significantly clearer in the final WRMP. Testing and optimising the frequency of imposing these different restrictions is not explored within the plan, in particular in the context of the experiences of the 2022 drought. The company should provide sufficient and convincing evidence that the 1-in-5 year or 1-in-10 year hosepipe ban frequency has been discussed with customers and stakeholders and meets their expectations.</p> <p>As well as the company's selected outage allowance increasing significantly between WRMP19 and WRMP24 for 2025-26, it remains high throughout the planning period. Southern Water's outage allowance is high compared to most other companies', at over 6% of the company Distribution Input. Therefore, this planning assumption contributes significantly to the company supply-demand balance and its</p>	<p>hybridb-drpo-v2-2075</p> <p>Our reduced level of service in Hampshire reflects the abstraction licence changes imposed upon us for the River Test and River Itchen in 2019 and the Section 20 agreement we have with the EA. In our Drought Plan 2019 and our revised draft Drought Plan 2022, we set out a series of flow triggers at which we would take actions to protect supplies in accordance with the agreed actions set out in the Section 20 agreement.</p> <p>Our assessment of flows on the River Test suggested that we would likely reach the trigger at which we would need to apply for a drought permit around once every five years. Current EA guidance on drought permits and orders requires that steps are taken to reduce demand before drought permits are either applied for or implemented. Supported by recent modelling, we therefore expect that we may need to impose restrictions on water use at a similar frequency to drought permit and order applications, i.e. around once every five years.</p> <p>We have communicated this risk to our customers in Hampshire consistently throughout our WRMP19 consultation, our current published (2019) Drought Plan, and our consultation in 2021 on our latest draft Drought Plan. The message is also reported consistently alongside all our material provided to the Water for Life Strategic Resource Option Scheme, and highlighted as one of the drivers of the need for such a scheme</p> <p>Since 2019, we have made two drought permit applications for the River Test, once in 2019 and again in 2022. We have also applied TUBs once in this period, in 2022. The actual frequency of restrictions experienced by our customers in Hampshire is therefore broadly in line with the risks we have highlighted. We expect these risks to remain elevated until we have completed delivery of our strategic water resource option for Hampshire.</p> <p>We have revised our outage calculations since dWRMP24. The results are discussed in our revised dWRMP24 technical report.</p>

Reference	Ofwat comment	Southern Water response
	<p>proposal for significant investment. The company needs to present sufficient and convincing evidence that the outage allowance is appropriate in both the short and long term, is not driving unnecessary and high regret investment, how this level of outage tracks the reported unplanned outage performance commitment, and how the company has considered options to reduce its outage allowance.</p> <p>Southern Water has justified why its DO methodology does not align fully with the WRPG, stating that it does not attempt to calculate 1-in-500 year source DOs. Instead, it is focused only on WRZ level groundwater DOs. The company should review its baseline DO to ensure that it is consistent with the WRPG (section 5.3).</p> <p>The company has updated its population forecasts since WRMP19, which has resulted in a change in assumed population of around 80,000 for the year 2025-26. This is a significant change in starting assumption. Although the company describes the methodology which results in the change, and that outturn for 2021-22 was 2% higher than forecast, it provides insufficient evidence that this updated number (which is 3% higher) accurately reflects the population of the company's region and, given its significance, is appropriate. We expect the company to provide sufficient and convincing evidence in its final WRMP that the revised population forecast for WRMP24 is reliable including validation against outturn, and why it is different to the WRMP19 forecasts from less than five years ago.</p>	<p>The WRPG requires us to use a system response DO. We calculated this and provided the data in our dWRMP24 for each of our WRZs using our system simulation models developed in Pywr.</p> <p>Although calculated, we did not report individual source level DOs in our dWRMP24. This was because in many cases, sources are constrained by conjunctive use and network effects. Hence, the system response DO can differ greatly from the summation of DO of individual sources.</p> <p>In our revised dWRMP24, we have provided a high-level breakdown of source level DOs where available. However, it should be noted that this is not possible everywhere. This is particularly the case for storage reservoirs where the estimates of DO are intrinsically based on conjunctive use. For such sites, only the water resource planning system level DO responses are available. We have also provided a comparison of the WRMP19 DO estimates and the WRMP24 iterations, and where they differ, the reasons for that difference.</p> <p>The growth forecast for WRMP24 was jointly commissioned by all WRSE companies, using an independent consultant, to ensure consistent methodology and data across the region. The baseline growth forecast is based on Local Area Plans in line with WRPG. We have updated the growth forecast for our revised dWRMP24 using the same consultant. The consultant's report that describes the approach and data sources for WRMP24 growth forecast is included as an annex to the revised dWRMP24.</p>

Reference	Ofwat comment	Southern Water response
9	<p>Options to meet water needs</p> <p>Identifying an appropriate number and range of options to meet water needs is essential to ensure that customers and stakeholders have confidence that the preferred programmes are optimal. We have significant concerns about the volume, extent and breadth of options considered by Southern Water. Southern Water should scope and consider a broader range of options, noting that considering an increased range of options could have implications for scaling, timing or selection of large infrastructure projects.</p> <p>Southern Water's feasible options list included only around 140% of its 2050 supply-demand balance. There are three option types providing 89% of this volume: desalination (around 35%), drought orders (26%) and conjunctive use of operation of sources (around 11%). This is not considered a sufficient volume and is not an extensive or broad enough range of supply and demand options, given the company is facing a large deficit. The lack of feasible options is more evident at a WRZ level, for example the company presents 20 feasible options for zone SWSHWN with 17 of these selected as preferred. This raises concern that the decision making process has not been supplied with sufficient options to provide confidence that the proposed programme is long term best value. If we continue to have concerns around the quality of the optioneering process at the final WRMP, we reserve the right to query and request additional evidence at PR24 and make decisions on appropriate funding accordingly. We are also concerned by inconsistencies between the WRMP tables and query responses which limit our confidence in the analysis of option numbers, types and WAFU benefit against deficit. We reiterate the need for robust, consistent data in the final WRMP, to justify investment proposed in the business plan.</p> <p>In a recent 'Hampshire Water Transfer and Water Recycling' solution checkpoint meeting with Portsmouth Water, Southern Water stated that that the DO for this option in the dWRMP24 will be incorrect, as the assumptions in the WRSE emerging Reginal Plan were incorrect. Southern Water needs to ensure that the DO for this scheme, and other associated option</p>	<p>As a result of the need to reduce the amount of water we take from rivers and aquifers in order to protect the environment, we are constrained to look for non-traditional sources of water such as desalination, recycling and large bulk imports from neighbouring companies. There are limited suitable sites across our region where such large infrastructure projects can be built. Consequently, we have a narrower range of options to consider for WRMP24 compared to our previous WRMPs. We have nevertheless looked at previously rejected options to see if some of them could be considered for future development but we have not been able to identify any that could be sufficiently developed in time for WRMP24 except one asset enhancement option at our Lewes Road groundwater source. We aim to address this issue for WRMP29.</p> <p>We acknowledge the point relating to the sufficiency of feasible options in our region. However, this reflects the lack of options in our region that are feasible and environmentally sustainable. As we describe in our revised dWRMP24 we are exploring a number of mitigation options with the EA and NE in order to reduce the frequency of requiring drought orders and permits in the future. We do not yet have granular costs nor detailed environmental assessments for these options but they will increase the number of options that we can consider in our WRMP decision making. We agree with the need for robust and consistent data in our final WRMP but note that we were only made aware of the need to review mitigation options during summer 2023.</p> <p>The DO of HWTWRP has changed as a result of further work undertaken since the submission of our dWRMP25. We are now considering outputs of 20MI/d, 40MI/d and 60MI/d. The new DO figures have been used for the revised dWRMP24.</p>

Reference	Ofwat comment	Southern Water response
	<p>data, is correct within its final WRMP, Reginal Plan and the RAPID gate submission.</p> <p>Some of the screening criteria applied to the unconstrained list do not align with the need to identify suitable and technically feasible options to progress to more detailed appraisal. This includes 'Will the option deliver beneficial environmental outcomes, whether on its own or in combination?' and 'Would the option provide enhanced resilience through broadening types or locations of water resources available for supply?'. These criteria and others are not identifying necessary traits of options to be suitable for consideration in a dWRMP. This may be contributing further to the lack of feasible options to be optimised later in the process. Southern Water should further describe the criteria and justify with sufficient and convincing evidence of the reasoning for their inclusion and appropriateness at this stage of the decision-making process.</p> <p>Several option types are effectively screened out prior to the option appraisal stage. This includes third-party options (as discussed below) and moving abstraction locations. As abstraction licence reductions (short term and longer term for environmental destination) are driving a significant proportion of the need for investment, alternative options that allow environmental improvements to be made that may be more effective or better value should be explored. This includes considering moving abstractions rather than simply reducing them and needing to replace that water on a like for like basis. Many of the options rejected and in the reassessment at WRMP24 category could provide significant benefits to the supply-demand balance and are potentially relatively low cost. Southern Water needs all the reasonable options to appraise that it can identify, given the scale of problem and the unit costs being presented. The company's approach is a missed opportunity to find lower cost or better value options to be delivered in 2025-30 and beyond.</p>	<p>While a number of criteria are used to assess the feasibility of an option, options are seldom selected or rejected based on a single criterion. We have included the potential environmental impact of an option and its resilience to drought in our screening criteria given the requirement for us to lower the environmental impact of our abstractions and to maintain supplies without resorting to drought permits/orders in more severe droughts than have been experienced over the last hundred years or so since the records began.</p> <p>Our ability to relocate existing abstractions is limited by the geological and geographic setting. Our most sensitive abstractions for the River Test, River Itchen and Pulborough are already located close to the lower tidal reaches of the rivers from which they abstract or impact. In the case of the River Test and River Itchen, existing flow targets or future (CSMG) flow targets are not met at these lower reaches and therefore the scope to increase abstraction is limited. Pulborough is already very close to the tidal limit and any increase in abstraction is likely to be ruled out under the precautionary principle due to adverse effects on designated sites whilst sustainability investigations are ongoing.</p> <p>The Brighton and Worthing Chalk blocks are constrained by estuarine rivers and nearly all existing groundwater sources are under review for potential risk of deterioration under the WFD. Similarly our Kent Medway WRZs are under risk of deterioration assessments and are also constrained by potential risk of impacts on the North Kent Marshes SAC.</p> <p>Whilst our WINEP investigations, monitoring and modelling studies to quantify and understand any potential impacts are ongoing, we cannot determine any alternative abstraction locations, that would not have similar, or potentially</p>

Reference	Ofwat comment	Southern Water response
	<p>The company has very few third-party options on its option lists. This is particularly true for non-incumbent water company third party options. There is insufficient evidence that the company has met the expectations around the identification and fair treatment of third-party options, as described in the WRPG. This includes the company taking a passive approach to option identification, stating that may options were rejected due no further discussions with the potential supplier taking place, where guidelines expect an active engagement role for the company. As a result, Southern Water states that these third-party options have significant uncertainty on cost, availability of water and other key determining factors. This contradicts the expectation that companies should support third parties in their provision of information and analysis as part of the development of third-party options. We expect sufficient and convincing evidence in the final WRMP that all parts of the guidance have been appropriately followed in relation to third party options and that the lack of third-party options in the company's preferred plan is low regret best value.</p>	<p>more damaging effects. Furthermore any alternative abstraction locations would still require assessment to understand the risk of deterioration.</p> <p>Options appraisal between 2024 and 2027, following the conclusion of WINEP investigations, may identify potential feasible options to relocate or redistribute our abstraction licences to locations with less impact. Any such feasible options will be included in our WRMP29 options appraisal.</p> <p>We were contacted by two third-party suppliers for potentially supplying water to Southern Water. One was the option of farm storage on a farm in our Hampshire Andover WRZ and the other was tankering of water from Norway. In the first instance, the potential supplier decided not to proceed further with their interest after we directed them to our Bid Assessment Framework to formally submit their plan. In the case of tankering water from Norway, the option was assessed by WRSE and it was decided not to take it to the feasible stage until we had further clarity on the commercial terms and a few other technical details (berthing locations for the vessels, connection points to public supply network, water quality implications etc.). We have recently been contacted by the supplier again as they plan to carry out a trial later this year. We have held a first meeting with them and agree to continue engagement with them to see if the proposal can be developed further. However, given the timelines, it is unlikely to feature in our WRMP24.</p>
	<p>Southern Water has not provided sufficient information regarding option utilisation in its Draft Plan. Extra information was provided to Ofwat on utilisation after querying. We expect to see more robust evidence on utilisation in the final WRMP, in line with feedback in our pre-consultation feedback letters, to fully explain and justify the utilisation rates given and to provide evidence that modularity and scalability in optioneering has been fully considered and explored to manage low utilisation situations. We require more evidence in the final plan that operational interventions have been</p>	<p>We have discussed this with WRSE. We have considered adding significant costs to the drought permits/orders in order to force the model to fully utilise existing options before resorting to drought permits/orders. However, even adding additional costs of drought permits/orders still makes them cheaper than desalination/recycling options. Secondly, artificially inflating the costs of drought permits/orders to force the model to fully utilise other options interferes with the principle of developing a least-cost plan. While the investment model may be selecting drought options may be selected in preference to supply-side options, thereby suppressing the utilisation of these options; in reality, we would not be applying for a drought permit/order unless all other options have</p>

Reference	Ofwat comment	Southern Water response
	<p>considered and will be implemented where appropriate if this is the best value solution.</p> <hr/> <p>Southern Water has provided utilisation information on some key options. In its response to our query, Southern Water accepted that the utilisation rates it has provided are under-reported because drought options are selected instead. This should be addressed in the final WRMP. Where utilisation data is from the WRSE modelling, Southern Water should consider the practical and operational implications of the data, rather than simply relying on the model outputs. [FAISAL]</p>	<p>been fully utilised. We will provide additional narrative around the utilisation of supply-side options in our revised dWRMP24 and reflect the utilisation of options appropriately in the WRP tables.</p>
10	<p>Decision making and prioritisation (WRSE) Notwithstanding our concerns above on the identification and selection of options, the explanation around decision making is clearly set out and standalone at the company level, with demonstration of how the WRMP is informed by the WRSE Reginal Plan. For the final plan, Southern Water should continue to ensure that the narrative contains a complete and standalone explanation of decision making at the company level.</p>	<p>The comment is noted and we will retain the description of the decision-making process at the company level in the revised dWRMP24.</p>
	<p>Southern Water has adopted an adaptive planning approach using regional decision-making tools. The approach taken is appropriate for its high-risk problem characterisation. An explanation of the optimisation process across its nine adaptive pathways used to derive the preferred programme and output comparison has been provided.</p> <p>Southern Water is using adaptive planning and provides an explanation of the approach to managing uncertainty and adaptive planning. However, it has not carried out sensitivity analysis on the timing of adaptive plan branches to explore the trade-offs and justify the timings and this should be completed for the final plan. Southern Water should further demonstrate in its final plan that decision making has not been influenced by artificial constraints and that constraints are appropriate. This includes presenting the implications of</p>	<p>We have noted this comment</p>

Reference	Ofwat comment	Southern Water response
	<p>sensitivity testing including different glide paths on water efficiency and leakage.</p> <p>The best value metrics used have a line of sight to the plan objectives. However, it would be beneficial to maintain that line of sight to sub-metrics and to the ultimate outcomes in order to structure and justify the preferred plan. In its best value analysis, the company has considered a range of economic, social and environmental benefits that the options can deliver. Southern Water has not referred to Ofwat's public value principles. We would like Southern Water to use Ofwat's public value principles, and to reflect expectations set out in the PR24 final methodology, within its Best Value Planning process in its final plan, and to explain how these have been used to inform best value decision making.</p>	<p>The Public Value principles are well aligned with the approach we have adopted to Best Value Planning across WRSE and are also reflected in our dWRMP24.</p> <p>Principle 1: We developed, and used, a Best Value Planning framework to take account of social and environmental value in developing the draft Regional Plan and our dWRMP24. Please see section 6.5 and Section 7 of our dWRMP24.</p> <p>Principle 2: We considered several non-monetised criteria alongside cost to identify the draft Best Value Plan for the WRSE region, and our dWRMP24. The criteria used included: options customers prefer (based on our customer research); environmental benefits and disbenefit; natural capital creation; BNG and resilience. We consulted stakeholders and customers on the best value objectives and criteria.</p> <p>Principle 3: We have engaged openly and transparently throughout the development of the draft Regional Plan and our dWRMP24. We have taken account of the priorities and preferences of customers, and knowledge and expertise of stakeholders, through the development of the dWRMP24. Information on the engagement we have undertaken and how this has been considered is presented in Section 4.5 and Annex 6 of our dWRMP24.</p> <p>Principle 4: We are continuing to engage with customers and stakeholders, through the public consultation on our dWRMP24. As part of this we are seeking feedback on the cost and value that the dWRMP24 provides. The feedback we receive to the consultation will be considered and taken into account in finalising our plan. The investment needed to ensure a secure and sustainable future water supply will then be included in the Price Review process, as part of which there will be further consideration of affordability and support mechanisms required to ensure we adequately consider and protect vulnerable customers.</p> <p>Principle 5: We are committed to work and collaborate with other water companies and the wider stakeholder community to ensure we can continue to deliver a secure and sustainable water supply. Collaboration takes a wide range of forms, from developing and sharing resources with other water</p>

Reference	Ofwat comment	Southern Water response
		<p>companies to delivering water efficiency programmes with retailers and housing developers and working with stakeholders to improve catchments and deliver environmental improvements (Annex 9 of our dWRMP24).</p> <p>Furthermore, collaborative working will be an integral principle in all future water supply infrastructure development to ensure we optimise solutions and benefits as well as leveraging contributions as appropriate.</p> <p>Principle 6: We currently work in collaboration with a range of partners and actively seek opportunities to work in partnership to achieve our public value commitments and make a positive contribution to our customers, communities and the natural environment.</p> <p>Ofwat's public value principles are not explicitly considered within our assessment of social benefit, as these principles are not referenced in the WRPG or the supplementary guidance on Environment and Society in Decision Making but as outlined above, they are integral to long term planning of water resources as described the draft Reginal Plan and our dWRMP24. It is referenced in our revised dWRMP24.</p>
	<p>In combination assessments have been included for environment at the programme level as part of Best Value Plan assessment. However, Southern Water has not yet completed in combination DO assessments for some of its strategic resource solutions, and it will be updating its option DO assessments for the next round of investment modelling to inform the final plan. These are important to understand how the options work together as a system. Southern Water should work with WRSE to make sure the SESRO, Severn Thames Transfer (STT), Thames to Southern Transfer (T2ST) conjunctive use benefit of 19Ml/d is accounted for within the regional modelling.</p>	<p>Since publication of our dWRMP24 we have jointly worked with Portsmouth Water to develop a combined system simulation model of our Western area and the Portsmouth Water's supply area. The purpose was to validate the solution put forward in the dWRMP24 to estimate combined conjunctive-use DOs for the Havant Thicket Reservoir and HWTWRP. We have updated our estimates of the conjunctive use benefits of the Havant Thicket Reservoir for our revised dWRMP24 based upon the outcomes of this modelling.</p> <p>The results show that generally the solutions proposed for 2030, 2040 2050 are capable of meeting supply-demand balance challenge in Hampshire. For 2050, the benefits of T2ST are also considered.</p> <p>We have worked with Thames Water to undertake an enhanced system simulation modelling of T2ST. The objective was to conduct an assessment of the DO benefits of T2ST to the Regional Plan.</p> <p>The key focus of this assessment was to establish whether there is likely to be conjunctive-use DO benefit through a link between the River Thames and Southern Water's Hampshire supply area i.e. if the DO benefit of T2ST to</p>

Reference	Ofwat comment	Southern Water response
		<p>Southern Water is greater than the loss of DO to Thames Water (the 'dis-benefit').</p> <p>The DO benefits of T2ST to Southern Water were consistent across a range of return periods (from 1-in-2 year to 1-in-500 year). The 80MI/d variant of T2ST provided around 76-77MI/d of benefit, while the 120MI/d variant provided 114-115MI/d of benefit. The full amount of the scheme was not utilised because Southern Water's peak demand was not required to be met at all times of the year.</p> <p>The results of including the transfer utilisation timeseries in the Thames Water model show a reduction in DYAA DO in Thames Water of between 34MI/d and 43MI/d for the T2ST 80MI/d variant and a reduction of between 52MI/d to 66MI/d for the 120 MI/d variant.</p> <p>We have used the outputs of these modelling studies to update our data inputs for the revised dWRMP24.</p>
	<p>A comparison of the cost difference between the least cost and best value programmes has been provided. However, the company should present the costs and benefits of the Least Cost Plan against the preferred and other alternative plans more clearly in its final plan. Where investment is needed, beyond least cost, the value of the additional benefit needs to be presented within the WRMP planning tables. The robustness of this valuation data is important where companies are requesting significant areas of investment. As well as clearly presenting this, the company should provide sufficient and convincing evidence that the costs to deliver the Best Value Plan is outweighed by the additional value it provides.</p>	<p>The comment is noted and we have presented a clearer comparison of the costs as suggested.</p>
	<p>Southern Water proposes to invest £139 million to improve connection within its network in the 2025-30 period. Over the whole life cost, Southern Water has presented £9,782 million of investment in preferred options. The company should ensure the benefits it has identified for these schemes are sufficiently evidenced. Additionally, the company may have schemes where interconnectors are necessary to deliver new supplies to areas of demand. In such cases, the schemes should be evaluated by combining the costs of developing the</p>	<p>The comment is noted.</p>

Reference	Ofwat comment	Southern Water response
	<p>new supply with the interconnector costs as a single option to produce an optimised Best Value Plan. We also reiterate our pre-consultation feedback, which aligns with the WRMP guidelines, that sub zonal schemes (not impacting on zonal WAFU) can be discussed within the narrative of the WRMP to provide context, but they need to be presented and justified with sufficient and convincing evidence in PR24 business plans rather than the WRMP. When presenting such enhancement schemes, companies should clearly identify how they have assessed the degree of overlap with activities it is funded to deliver through base expenditure. Companies should not expect additional customer funding to address risks resulting from under delivery in the current or previous periods.</p> <p>The feedback Southern Water and WRSE receive on their Draft Plans, and potential changes to the estimated cost of SESRO over time, have the potential to influence the need for, timing and sizing of this option further. While SESRO is currently selected across scenarios in the WRSE Draft Plan, the choice of size is presented as a close decision with small differences in associated best value metrics. The smaller reservoir option (100Mm3 capacity) is currently selected as it is assessed as performing better against some of the best value criteria, particularly those that provide additional benefits to the environment and society. The plan suggests that the larger reservoir option (150Mm3) performs better against the resilience criteria and biodiversity net gain.</p> <p>The selection of SESRO is based on current costs which we note have not changed significantly over recent years and may do so as the option development work progresses. WRSE should work with the relevant water companies, including Southern Water, as well as engaging with the market to develop more mature costings and to further evidence the robustness and reliability of SESRO costs, given they have not changed significantly in more than five years which is unusual for a project of this scale. WRSE and Southern Water should provide clear and robust evidence around the selection or non-selection of SESRO in their final</p>	<p>We have worked with WRSE to provide a clearer narrative and justification on the selected size of SESRO.</p>

Reference	Ofwat comment	Southern Water response
	<p>plans, including any impact of its delivery cost changing, and present a clearly evidenced and thought-through approach. [NICK]</p>	
	<p>The size of SESRO selected is also sensitive to the size of the 'Hampshire Water Transfer and Water Recycling' selected. The water recycling plant was sized at 15MI/d within the RAPID accelerated gate two submission and has since been increased to 60MI/d following WRSE investment model outputs selecting this option. Such an increase in size raises deliverability risks that Southern Water, working with WRSE, needs to consider. To understand the deliverability risks around a 60MI/d water recycling plant, we understand that WRSE is in the process of running sensitivity analysis to explore sizes smaller than 60MI/d and modular options. Southern Water should include this analysis and consideration of these risks in its final plan.</p>	<p>We have developed a modular approach to constructing the water recycling plan to recharge Havant Thicket Reservoir at 20MI/d, 40MI/d and 60MI/d capacities. These capacity variants have been tested for the revised dWRMP24.</p>
	<p>There is a significant baseline deficit under the different planning scenarios considered and the complexity of the planning problem justifies the need for adaptive planning. Southern Water adopts the WRSE approach for adaptive planning. The plan selects nine alternative pathways which diverge in 2030 and 2035 based on decision points around population and environmental destination/climate change, respectively. The method combines the Ofwat common reference scenarios with a wider range of climate and demand scenarios to explore a range of futures. The method combines multiple scenarios, for example, high climate and high environmental improvement, then optimises the option selection in 2025-30 to ensure a surplus supply under all future pathways.</p>	<p>Our response to this comment is included in annex 28 of the revised dWRMP24.</p>
	<p>Southern Water has stated that the Ofwat core pathway is largely covered by situation 8, 10 because it includes minimum environmental destination and ONS18 population growth. This does not align with the WRPG definition of a core pathway, because it only includes investment required to meet a single future scenario. We also have concerns that there is a risk of over-investment in 2025-30. This is because</p>	

Reference	Ofwat comment	Southern Water response
	<p>the options are chosen based on scenarios that are more severe than the Ofwat common reference scenarios. Since the Ofwat common reference scenarios represent 'plausible extremes', combining them together risks producing a very low probability scenario. This means Southern Water may be planning to invest in some options that have a very low chance of being needed or could have low rates of utilisation. Further, it is unclear which options would be selected in the different pathways, and when they would first be utilised.</p> <p>For its final WRMP, Southern Water should present a core pathway in line with the WRPG definition of low-regret investment to meet future uncertainties and additional option value to allow further flexibility in the future. We expect the company to demonstrate that plausible scenarios have been used to optimise the timing and selection of low-regret investment.</p>	
	<p>In the final WRMP, Southern Water should clearly set out the impact of the Ofwat common reference scenarios compared to the 'most likely' scenarios on which the preferred plan is based. This should include quantifying the impact on demand of the low and high scenarios for climate change, demand, and abstraction reductions across the planning period. The company should also quantify the estimated impact on the expenditure requirement of:</p> <ul style="list-style-type: none"> • planning based on the high scenarios for climate change, demand, and abstraction reductions, and the slower scenario for technology; and • planning based on the low scenarios for climate change, demand, and abstraction reductions, and the faster scenario for technology. <p>This will allow for improved understanding of the drivers of investment, the sensitivity of the plan to future scenarios and confidence in the investments being proposed. We expect Southern Water to use the results of this testing to identify and justify with sufficient and convincing evidence low regret investments, rather than just ones that meet both high and low planning needs in a non-adaptive way.</p>	<p>Our response to this comment is included in annex 28 of the revised dWRMP24.</p>

Reference	Ofwat comment	Southern Water response
	<p>The justification for decision points are presented in the main report and has subsequently been clarified further. Southern Water sets out a Monitoring Plan including measurable metrics for some areas. For the final WRMP, Southern Water should develop a Monitoring Plan for all decision points and clearly explain the conditions that would cause one pathway to be adopted over another using clear observable metrics. The final plan should also include sensitivity testing of the timing of these points. Currently they appear to be driven by the 5-year planning and investment cycle, rather than the lead-in time for specific enhancements.</p>	<p>Our response to this comment is included in annex 28 of the revised dWRMP24.</p>
	<p>The company includes a Contingency Plan in Annex 11 that identifies key short-term delivery risks that could have an impact on supply demand in the 2025-30 price control period. This should be included in the overall adaptive plan, in line with the WRPG supplementary guidance for adaptive planning, which states 'An adaptive pathway will help to reduce the uncertainty around delivery of options'.</p>	<p>The comment is noted.</p>

Reference	Ofwat comment	Southern Water response
	<p>It is not clear how the target headroom scenarios presented interact with adaptive planning and future assumptions. In our pre-consultation letter we stated that, as a result of the incorporation of adaptive planning into the WRMP, we expect that the target headroom component of the supply-demand balance should reduce. However, Southern Water's main report states that the target headroom generally increases steadily through the planning period, driven by the increasing uncertainty in the demand forecast and the impact of climate change on supply and demand over time. There was no evidence found of target headroom scenarios in Annex 10 as referenced in the main report. Southern Water should calculate its target headroom with consideration to the uncertainty accounted for by adaptive planning, as per WRPG section 7, and present the results in its final plan.</p>	<p>The adaptive planning branches set out the alternative forecasts for climate change, Environmental Destination and population growth explicitly. Therefore, the adaptive planning approach takes account of some of the uncertainty arising from a range of forecasts at the branch points.</p> <p>To avoid double counting risks uncertainty, any components used to define a branch (Environmental Destination, growth, etc) have been removed from the headroom assessment after that branch point. Therefore, the root part of the adaptive plan defined as the beginning of the plan (2025) to the first branch point (2035) has a full target headroom assessment.</p> <p>After the root section the adaptive plan branches on environmental destination and growth forecasts but leaves climate change as a central or median estimate. Therefore, the target headroom profile from this first branch point drops supply-side components S1, S2 and S3 (if they had been used) and demand-side D2 component. This target headroom profile is referred to as the EDG profile to indicate it has dropped components associated with Environmental Destination and Growth (EDG).</p> <p>In the final set of branches from 2040, the environmental, growth and climate change components are explored. Therefore, a third target headroom profile is required in which D3 and S8 are reduced to account for the upper and lower quartile impacts of climate change on the demand and supply forecasts respectively. This target headroom profile is referred to as the EDGC profile to indicate it has dropped components associated with Environmental Destination, growth and climate change (EDGC).</p> <p>Annex 10 of our revised dWRMP24 has been updated to show the supply demand balances for the revised datasets and adaptive planning situations.</p>
	<p>Desalination options present comparatively worse value against other options the company has presented for whole life costs. A drought option (Darwell reservoir) and a leakage option present worst unit cost value out of all the options. The companies need to evidence that options are the most cost efficient/best value option for inclusion in the preferred plan. Although on average preferred options have a lower unit cost than feasible options, Southern Water should clearly set out why any high unit cost solutions were selected in its final plan</p>	<p>The comment is noted. We have provided greater narrative around our preferred options in the revised dWRMP24.</p>

Reference	Ofwat comment	Southern Water response
	<p>and where leakage costs are high, Southern Water must evidence efforts to reduce costs in final plans.</p> <p>As mentioned above, Southern Water needs to be clearer around the robustness and reliability of the costs of developing SESRO. The costs provided have not changed since last submission. Considering the significant additional customer funding provided at PR19 to support this option's development, we expect robust and up to date costs, presented transparently for all customers and stakeholders to engage with. Further evidence will need to be provided in final plans, to provide assurance around costs, and impacts any changes may have on the options selection.</p>	<p>Costing of SESRO has not been carried out by Southern Water. We have accepted our share of the cost proposed by WRSE while a formal agreement is signed between the companies benefitting from the reservoir.</p>
11	<p>Long-term Best Value Plan</p> <p>We have concerns regarding the robustness and reliability of the costs and benefits presented by the company in its preferred programme. Replying to a query, the company stated that it needed a longer response time as it needed to undertake further detailed assurance on data that has been presented in its consultation. Southern Water also confirmed it had not yet assessed the impacts of its plan on base expenditure and that it intended to use a more detailed build-up of costs to inform its final WRMP and business plan submissions.</p> <p>While we recognise that plans will develop over time and that costs and benefits may be refined, we are concerned that the company is not demonstrating sufficient and convincing evidence that it has a confident and accurate understanding of the efficient costs and benefits associated with the delivery of its plan. If costs and benefits of options are to change significantly then this will impact the decision-making process and the justification for the optimised preferred programme consulted upon in the dWRMP. For its final WRMP we expect the company to clearly explain any changes to costs and benefits presented for the preferred plan from those presented in its dWRMP. The company should provide sufficient and convincing evidence for the reasons for changes and explain how these have impacted the decision-</p>	<p>In terms of option costs and benefits, changes have been made to those options where designs have matured since dWRMP24 development. These include the SROs as well as the Littlehampton WTW recycling option. The scope for some options has also been revised and costs updated accordingly. For the vast majority of option, there has been no change in DO benefit and the only change in cost has been an uplift to 2020-21 cost base.</p> <p>Key changes to costs and benefits of options since dWRMP24 publication are given in the main SoR document and are also included in our revised dWRMP24.</p>

Reference	Ofwat comment	Southern Water response
	<p>making and optimisation process that produced its final WRMP preferred programme.</p>	
	<p>The company has identified £1.7 billion of enhancement expenditure relating to the delivery of its WRMP24 in the 2025-30 period. This is a significant increase on the £342 million the company requested for supply demand balance enhancement expenditure over the 2020-25 period at PR19. 12 Over the 2025-50 period, the company has identified a requirement for over £7.1 billion of enhancement expenditure to deliver a long-term supply-demand balance.</p>	<p>Given the requirement to reduce the amount of water we take from the environment, our plan relies on large infrastructure projects to maintain supplies. Demand reduction targets too require significant investments in interventions such as smart metering, home visits and mains replacement. The costs of these options are reflected in our plan.</p>
	<p>For this investment Southern Water plans to deliver around 350MI/d of supply demand benefit (excluding interconnectors) in 2025-30. However, we have some concerns over the 2025-30 enhancement, including the company's metering improvements. The company proposes to deliver metering improvements at a unit rate of 14.7 £m/MI/d in the 2025-30 period, significantly higher than the industry median of 6.7 £m/MI/d.</p>	<p>Metering costs are discussed in our response to 7.</p>
	<p>The company should provide sufficient and convincing evidence to justify the selection of these high unit cost schemes. The company has presented a significant number of feasible options with lower AICs than the selected Sittingbourne recycling and SESRO (once the transfer costs are added). The company should provide sufficient and convincing evidence that the preferred options being selected, across all areas of its plan, are best value in its final WRMP24 and ensure costs are reliable, efficient and appropriately allocated. Given the high unit costs, Southern Water should also consider the implications of not selecting SESRO and its transfer as part of its final WRMP, and what its programme would deliver and cost under this scenario, and it should work with WRSE to understand the implications for other company plans.</p>	<p>We have carried out number of sensitivity runs to test the impact of exclusion and/or delay in delivery of large infrastructure projects in our plan. This is discussed in our revised dWRMP24.</p>

Reference	Ofwat comment	Southern Water response
	<p>Southern Water has assessed the impact on customer bills, estimating that the dWRMP results in an end of 2029-30 increase of £242 to average customer bills. Although we welcome this being presented in the dWRMP, there is insufficient evidence that customers have been engaged on this, nor is any context provided to show that there will be other costs impacting bills at PR24. We expect the company to provide sufficient and convincing evidence that the estimated bill impacts of the programme, and other areas of investment for PR24, has informed customer engagement and choices around policy drivers (such as leakage profiles and drought resilience timing), and therefore scheduling of investment in the final WRMP.</p>	<p>Our customer engagement is described in annexes 7.1 and 7.2 to this SoR. One of the engagement topics was bill impacts. In testing solution options for the earlier work in WRMP24 development, customers were asked to consider trade-offs between the reliability, cost and environmental impacts. They were provided with information that provides relative weighting of these when selecting their preferred options.</p> <p>In addition, bill affordability is central to PR24 delivery. This allows us to look at the whole of the customer bill, rather than individual sections. In this extensive engagement we looked at priorities, options and the impacts these have on bills. We see that the fundamental service, and of highest priority, is a reliable supply of wholesome water. This means that when customers select areas to remove scope for cost savings, these tend to be in elements of the plan that are 'optional'. Although important, these optional areas have lesser priority. Therefore this is where we have placed greatest focus of scope vs bill impacts.</p>
12	<p>Customer and stakeholder engagement</p> <p>Stakeholder engagement on the best value decision making process has been undertaken through the WRSE emerging Regional Plan consultation, including research into customer preferences and a consultation to gather feedback on Drought Plans. Customer engagement has been carried out through WRSE to determine customer preferences on demand management strategies and supply options. Customer preferences for recycling and demand reduction are described and evidence is provided of how these preferences were used to form Southern Water's dWRMP. Overall engagement with retailers has been limited due to lack of uptake of retailer-specific workshops held by WRSE. However, some engagement with business customers has been carried out through interviews held with business customers selected from Southern Water's and Portsmouth Water's region.</p> <p>Engagement with the WRSE regional group and with neighbouring water companies has been carried out as part of the work of the WRSE group. Consultations on regional strategies informed a large part of the customer and stakeholder engagement for Southern Water's dWRMP. Effective engagement with regulators has been undertaken and this engagement has been used to form the dWRMP. We</p>	<p>We note this comment have address it in the revised dWRMP24.</p>

Reference	Ofwat comment	Southern Water response
	would like evidence of more local customer engagement, beyond what has been completed to date as part of the WRSE group, before the final plan is finalised.	
	A list of stakeholders identified for engagement and consultation has been provided. However, no details of opportunities to enable co-funding or co-delivery have been identified. The plan states that 'together with other water companies', it had sought offers from third parties, from which it received one proposal for sea tinkering, which was not considered feasible. Further investigation of partnership opportunities for co-funding and co-delivery with stakeholders should be undertaken and set out in the final WRMP.	The comment is noted and is addressed in the revised dWRMP24.
13	<p>Assurance A Statement of Assurance has been provided, and there is some detail provided about oversight and the assurance process in the main report. Detail has been provided through a query on the governance used in developing the plan and how this has ensured robust decision making and provided lines of assurance.</p> <p>In the final plan, we expect to see evidence of assurance on Southern Water's understanding and acceptance of the approach to licence capping. This is to ensure the risk and impact this imposes on Southern Water is fully understood in the context of the largest drivers of future investment in the plan and the uncertainty that still surrounds this.</p> <p>As identified above, the dWRMP programme for 2025-30 represents a significant uplift in expenditure compared to the PR19 programme. For its final WRMP we expect the company to provide sufficient and convincing evidence that the Board has challenged and satisfied itself that the WRMP and the expenditure proposals within them are deliverable in the context of the wider PR24 business plan proposals. The company should also demonstrate that it has put in place measures to ensure that the plans, of which the WRMP forms a key part, can be delivered.</p>	<p>We have prepared a briefing note on the potential impacts of licence capping. This recognises that a large proportion of sustainability reductions (>100MI/d) could occur after 2030, once our extensive set of WINEP investigations concludes between 2024 and 2027.</p> <p>We have already highlighted that reaching our Environmental Destination is the largest single driver of supply-demand deficits in our plan. We have also highlighted that, due to the ongoing WINEP investigations the exact amount to which we will be affected by licence capping remains uncertain and will not be fully resolved until the next round of planning for WRMP29.</p> <p>A board assurance statement is included in our revised dWRMP24. Our PR24 Business Plan includes a chapter on deliverability.</p>

4. Feedback by Arun District Council and our response

Reference	Arun District Council comment	Southern Water response
099.1	<p>Thank you for the opportunity to comment on the documents forming the consultation on the Southern Water draft Water Resource Management Plan.</p> <p>Arun District Council (Arun) welcomes strategic long-term planning and investment for infrastructure and for securing resources for a sustainable future in the face of the impacts of climate change, alongside the need to deliver economic growth, housing and prosperity for existing and future generations.</p>	<p>Thank you for your response to our dWRMP24. We have taken onboard your feedback and provided a response to your representations below.</p> <p>The changes we have made to our plan as a result of consultation feedback are described in the main SoR document and in our revised dWRMP24.</p>
099.2	<p>Arun understands the reasons why T100, connected with reducing usage, is no longer proposed for inclusion in the plan with the original timings, particularly, considering comments made previously (11 May 2018 – Appendix 1) with respect to achieving this across the district. However, we would wish this to be included going forward, to ensure that communities have greater resilience to the impacts of climate change. It would also have the benefit of preventing harmful impacts to sensitive designated nature sites.</p>	<p>We are aiming to achieve a PCC of 110l/h/d by 2045 under dry year conditions. We have also tested a scenario whereby PCC under dry year conditions is reduced to 98l/h/d by 2045.</p> <p>We also plan to reduce non-household demand by 12% by 2037-38 compared to 2019-20 levels.</p> <p>The success of demand management initiatives depends on behaviour change in relation to water use. Aiming for higher targets than those required by regulatory guidance carries additional deliverability risk. We have taken this into account in setting our demand management targets.</p>
099.3	<p>Arun notes the alteration from previously suggested 'Resource Hubs' to a water recycling scheme to be located at the Littlehampton treatment works. Though supportive of the overall scheme, Arun reiterates the need for engagement with all stakeholders, including landowners and developers whose land will be affected. This is crucially important, as Arun is aware that Southern Water only control the land immediately around the treatment works. A strategic housing site of the adopted Arun Local Plan 2018 is directly sited on the</p>	<p>The comment is noted. We will take into account the changes in the area detailed in the Local Area Plan and will engage with all stakeholders, land owners and developers during the development of the project.</p>

Reference	Arun District Council comment	Southern Water response
	<p>southern boundary of the works and has outline approval. As such, any mitigation, such as noise or odour, especially taking account of future occupiers, should be incorporated into delivery of this scheme.</p>	
099.4	<p>A desalination plant is included within the plan in the short term and is considered necessary in all scenarios. However, it is not evident where the potential location is intended to be. In one part of the plan it is referred to as 'near the tidal River Arun' and yet within another it is clearly marked as being against the Sussex Brighton WRZ catchment. Clarity is therefore, needed in the final document over its proposed location, to aid all stakeholders in its planning going forward.</p> <p>Specifically, with respect to siting in the vicinity of either side of the tidal River Arun, the Council would wish to make its view clear that siting along the Arun coast would unlikely to be feasible or acceptable for a combination of reasons, including:</p> <ul style="list-style-type: none"> • Planned Strategic allocations e.g. the Littlehampton Economic Growth Area (LEGA) and West Bank development within the adopted Arun local plan 2018; • Existing built-up development and communities along the coast (e.g. at Littlehampton and Bognor Regis) and issues of amenity (e.g. noise, odour), access, maintenance to existing and new residents; • The sensitive nature habitats and sites of national and international biodiversity importance (e.g.. Pagham SPA and Climping SSSI); 	<p>The desalination option on the Sussex Coast has been removed from the revised dWRMP24 as a suitable alternative location could not be identified after the initially identified location became unavailable.</p>

Reference	Arun District Council comment	Southern Water response
	<ul style="list-style-type: none"> • The recent tidal breach that occurred at Climping in winter of 2020 and any additional impacts from climate change; • The important open landscape/ strategic gaps (including views from the South Downs National Park) at that location with land protected through at least one covenant; • The standard of the defences on the western side of the River Arun are variable and so their improvement would need to be factored into this location; and • The potential landfall siting of the proposed Rampion 2 pipework. <p>The local plan and polices map illustrating these matters can be viewed at https://www.arun.gov.uk/adopted-local-plan.</p>	
099.5	On a wider scale, for the Arun coastline, account should also be taken of the Kelp Restoration Project focused on the Sussex Bay, plus that it has been agreed by the Council to commission consultants to look at whether to apply any Coastal Change Management Areas (CCMA).	We will consider the Kelp Restoration Project in the assessment of any future options which could impact the Sussex Bay and take account of any Coastal Change Management Areas where applicable.
099.6	Arun recognises that the dWRMP is also geared towards actions to tackle demand reduction and efficiency (e.g. metering and design standards) and leakages in the network (new water mains). Together with some of the key infrastructure investments (e.g. desalination, recycling hubs and reservoirs) these all have significant cumulative long term cost implications at a time of inflation and cost of living pressures that may persist into the medium term. The Council therefore, supports the adaptive approach and would wish to see emphasis on	<p>We are mindful of the impact of our plans on customer bills. Cost is a key criterion used in our options appraisal process. Our plan has a number of recycling and desalination schemes that are costlier to build and operate compared to conventional abstractions from groundwater and rivers. We are however required to reduce the amount of water we take from the environment and therefore have to consider these options to ensure that we continue to meet our obligations as a water undertaker.</p> <p>As part of our leakage reduction strategy, we will be targeting leakage from our distribution system as well as working with our customers to reduce leakage on their premises. Reduction in leaks through our customers pipes will help lower their bills.</p>

Reference	Arun District Council comment	Southern Water response
	<p>best value measures that are flexible, equitable and low cost to prevent excessive additions to customer bills. For example as a council Arun are aware that park home residents can perhaps questionably, receive the costs for leakages, due to there being no incentive for site owners to do these in a timely fashion. These manifest both in terms of cost but also physical disruption to their supplies.</p>	
099.7	<p>In summary, though Arun are supportive of the water recycling in the Littlehampton catchment, it would encourage retention of the T100 target going forward; that effective engagement takes place on the proposed water recycling scheme at Ford and that additional clarity is needed over the intended location of the desalination plant.</p>	<p>Please see our responses to 099.2, 099.3 and 099.4.</p>

5. Feedback by Arqiva and our response

Reference	Arqiva comment	Southern Water response
317	<p>We are at a decisive moment for the water industry and the future security of the UK's water supplies.</p> <p>Without swift action and targeted investment, large swathes of the country are at risk of not having enough water.</p> <p>If we do not act now, by 2050 the UK is likely to require 4 billion additional litres of water a day to match public demand. The industry has rightly set targets to cut leakage by 50% and reduce individuals' daily water use to 110 litres by 2050. DEFRA has also called for a 20% reduction per person in the use of public water supplies in England by 2037.</p> <p>These targets can be achieved if we take the right steps now. There is a clear opportunity to reduce the amount of water currently wasted and empower consumers to reduce their consumption.</p> <p>Currently, over 3 billion litres of potable water is wasted every day in England and Wales through leaks. Many consumers also do not have insight into how much water they use, and how they could save water and reduce their household bills.</p> <p>We welcome Southern Water's focus on the need to reduce overall water demand in the draft water resources management plan. Action to reduce demand will improve the resiliency of public water supplies, reduce the amount of energy required to treat drinking water, and help customers realise savings on their household bills.</p> <p>To achieve the necessary reductions in water consumption and ensure consumers can fully realise the benefits, water companies and households must be empowered with the real-time data smart meters provide.</p>	<p>Reducing the amount of water used in households and non-households as well as leaks through our distribution system is a key component our water resources management strategy.</p> <p>We are aiming to meet the PCC, non-household and leakage reduction targets set by the regulators. In case of PCC and leakage, we have considered scenarios that go beyond these minimum targets.</p> <p>We recognise the important role that smart meters can play in regard. In order to promote water efficiency and reduce leakage on our customers premises, we plan to replace all our existing household meters with smart meters by 2030. We also plan to replace the majority of our current non-household meters by smart meters by 2030 and remaining by 2035.</p> <p>Our demand management strategy is described in detail in our revised dWRMP24.</p>

Reference	Arqiva comment	Southern Water response
	<p>Arqiva is the UK's only large-scale provider of gold-standard Advanced Metering Infrastructure (AMI) smart water metering. Our meters play a pivotal role in supporting water companies to meet their targets. AMI provides accurate, hourly data that helps ensure leaks don't go unnoticed. This data also provides consumers with greater insight and control over their water use. Neither of these outcomes can be delivered as effectively by manual or Automated Meter Reading (AMR) meters.</p> <p>We welcome Southern Water's focus within the Draft Plan on delivering the benefits of AMI smart metering to consumers. Southern Water's dWRMP identifies the significant benefits to be gained through rolling out AMI in the next regulated asset management plan period (AMP8), including significant reductions in leakage and per capita consumption. We encourage Southern Water to pursue an ambitious rollout of AMI to households and non-households alike, to help ensure that the delivery of AMI's benefits to demand reduction are not delayed.</p> <p>Government and the regulator also have important roles to play in enabling companies to deliver the benefits of smart water metering. DEFRA in its recent Environmental Improvement Plan 2023 (EIP23) stated that it was 'working to develop additional policy options...including...increased smart metering for households and businesses through accelerated investment between 2020 and 2030...[and] reducing non-household water demand by 9% by 31 March 2038 through smart metering.'</p> <p>Collaboration between industry and government to deliver policies that support smart water metering will be important to realising the technology's full benefits.</p> <p>As the regulator, it is essential that Ofwat supports water companies roll out AMI technology in the next regulated asset management plan period. Its final PR24 methodology highlighted the need for companies to 'embrace the opportunities to improve performance through smart</p>	

Reference	Arqiva comment	Southern Water response
	<p>technology’ and ‘consider the benefits of increasing detailed demand data that can be read without directly accessing the meter and provided on a near real time basis’. It is critical that this is translated into support for companies’ investment in the delivery of new AMI smart meters and upgrading of old and less advanced metering types within forthcoming business plans for 2025-2030.</p> <p>The faster AMI data is available and effectively used, the faster its benefits can be realised. Arqiva is ready to support UK water companies to take the steps and together to transform the UK’s water industry into a leader in efficient water demand management. We expand on these points below.</p> <p>The importance of advanced smart metering in water resource management We welcome Southern Water’s focus on AMI smart metering and rolling out AMI in the next AMP period. AMI provides water companies with hourly data on the amount of water delivered to a property, 24 hours a day, 7 days a week, with data transmitted securely from water meters to water company data centres. This level of insight enables water companies to deliver a range of benefits, as detailed below.</p> <ul style="list-style-type: none"> • AMI enables companies to detect more leaks across their network and respond quickly. More rapid leak detection is essential to bring down the amount of potable water wasted each day. The hourly data provided by AMI enables faster detection of leaks. In 2013-14, before adopting AMI, Anglian Water reported that it identified about 6,000-7,000 leaks per year. In 2021-22, driven by Arqiva’s gold-standard AMI smart metering network, the company identified about 65,000 total leaks. By using AMI, companies can identify leaks across their networks quickly, including common leaks such as toilets, which have been found to impact a substantial number of homes and waste about 450 litres of water a day. 	

Reference	Arqiva comment	Southern Water response
	<p>A wider deployment of AMI would enable millions more litres to be saved and help secure the UK's future water supplies.</p> <ul style="list-style-type: none"> • AMI helps empower consumers to reduce per capita consumption and household bills Consumers lack the knowledge they need to reduce their water consumption. One study found that almost half (46%) of people believe they only use 20 litres of water a day, while the average water consumption per person per day is 145 litres.⁶ Smart metering data encourages small behavioural changes that cut household water waste. <p>Thames Water has shown that consumers with an AMI smart meter typically reduce consumption by 12-17%. They have also demonstrated that smart meters can deliver savings for households that need it most; vulnerable consumers using over 500 litres of water a day reduced their consumption by between 8-17%, the equivalent of £40 and £166 a year.</p> <p>AMI could prevent 1 billion litres of water a day from being wasted by the mid-2030s, lowering carbon emissions The leakage and water consumption reductions made possible by AMI smart meters provides the opportunity to improve the UK's water resiliency and support the water industry's transition to net zero.</p> <p>Approximately 6% of the UK's greenhouse gas emissions come from the supply and use of water within households. If one million smart meters are fitted per year over the next 15 years to homes that are not metered, the UK would secure an annual saving of one billion litres of water a day by the mid2030s. This reduced household consumption could cut the UK's greenhouse gas emissions by 0.5% from 2019 levels (2.1 MtCO₂e), a significant and positive step towards reducing the sector's greenhouse gas emissions.</p> <ul style="list-style-type: none"> • AMI delivers wider economic benefits through improving operational efficiency AMI delivers a range 	

Reference	Arqiva comment	Southern Water response
	<p>of benefits to water companies. These include more efficient leakage control costs; operating cost savings from reduced consumption; capacity benefits of reduced consumption (deferred investment or opportunity to trade water); reduced meter reading costs; improved infrastructure management; and improved forecasting data. Unlocking these benefits of AMI helps water companies' lower their costs, enabling greater focus and spend on delivering better services to customers.</p> <ul style="list-style-type: none"> • Modelling from Frontier Economics and Artesia shows a positive business case for investing in a wider rollout of AMI, with positive benefit to cost ratios for companies across England and Wales. Accounting for the lower carbon emissions smart metering makes possible alongside expected cost savings further increases the overall benefits of a wider AMI rollout. In a 2022 study, Frontier Economics and Artesia outlined that an AMI rollout across England and Wales by 2030 could deliver up to £2.2 billion in net benefits by 2050.¹¹ In comparison, an AMR rollout was anticipated to deliver benefits between £30 million and £400 million. • The importance of government and regulatory support to unlocking the benefits of smart metering As the regulator, Ofwat has a critical role to play in enabling the delivery of AMI through its settlements for the next regulated asset management plan period. It is important that Ofwat encourages water companies to put forward ambitious smart water metering proposals and enables investment in advanced metering technology. This should include the rollout of new AMI meters and replacement of old, less advanced meters. <p>Ofwat recently released its final price review 2024 methodology. It outlined its expectation that companies 'embrace the opportunities to improve performance through smart technology and better use of data'. Further, Ofwat outlines that water companies should consider smart meter solutions the 'standard meter</p>	

Reference	Arqiva comment	Southern Water response
	<p>installation type for residential and business customers’ and that compelling evidence is needed to otherwise justify proposals to install ‘older visual read meter technologies’.</p> <p>Importantly, the methodology stated that Ofwat will ‘support smart metering enhancement requests where these form part of best value programmes justified by final WRMPs and are supported by sufficient and convincing evidence in business cases’.</p> <p>Enhancement allowances for the costs of upgrading meters are also addressed, with Ofwat stating ‘we will consider enhancement allowances for the costs associated with upgrading to a smarter technology when meters are replaced.’</p> <p>The final price review 2024 methodology is a step in the right direction. As companies draw up their final water resource management plans and business plans for 2025-2030, the regulator must ensure that it is supporting water companies with the right financial settlement to deliver smart water metering as one of the key tools enabling companies to meet water demand reduction targets.</p> <p>Arqiva is ready to partner with companies to deliver smart metering’s benefits We are the UK’s only large-scale provider of gold-standard smart water meter infrastructure, having installed over 1.9 million advanced smart meters to date for customers including Thames Water and Anglian Water.</p> <p>We know from experience the impact of installing AMI smart metering: greater water efficiency and better outcomes for consumers. Examples include:</p> <ul style="list-style-type: none"> • Since ramping up its AMI implementation programme in 2020, Anglian Water has increased the number of leaks it detects by about ten-fold, with Anglian now capable of spotting as many as 70,000 incidents in a 12-month period. Speaking on a webinar hosted by the Chartered 	

Reference	Arqiva comment	Southern Water response
	<p>Institution of Water and Environmental Management (CIWEM), Doug Spencer, head of Anglian Water's Smart Metering programme, noted that the company has been able to 'reduce leakage by 85 – 90% on the customer side' as a direct result of AMI in its trial areas in Norwich and Newmarket.</p> <ul style="list-style-type: none"> • Thames Water has used AMI to improve leak detection in residential and non-residential properties alike. On that same CIWEM webinar, the company shared statistics that showed an 8% 'continuous flow' rate for its household customers, rising to 26% amongst business users. • The insight AMI provides has enabled Thames Water to zero in on high-use properties and prioritise them for an in-home visit from its Smarter Homes team. The result of this laser focused programme is a per household reduction of around 10%. <p>We are at a critical moment. As climate change worsens and our demand for water increases, the UK faces a generational challenge to the long-term security and resilience of our public water supplies.</p> <p>Meeting this challenge requires concerted and decisive action. We must take the right decisions now to empower us to make a difference in the years ahead. Smart metering and the digitisation of water networks, which can transform the management of water supplies through near real-time data and insight, are essential tools to success.</p> <p>As a leader in smart metering, Arqiva can help companies to unlock the benefits of smart water metering data and thereby deliver the step change needed to ensure the long-term security and resiliency of public water supplies.</p>	

6. Feedback by Business Stream and our response

Reference	Business Stream comment	Southern Water response
312.1	<p>We appreciate the opportunity provided by wholesalers to comment on your respective WRMPs. Due to the amount of WRMPs produced across the UK, and the size and scope of the plans, we are not able to comment on the specifics of each plan, nor are we in a position to respond to individual surveys or questionnaires. This letter sets out our key areas of interest as general input into WRMPs.</p> <p>As a retailer in the non-household market, our focus is on issues that affect business customers in particular, but we wanted to raise two specific areas that will be of importance to us, and our customers, going forward:</p> <ul style="list-style-type: none"> (i) The contribution from non-household customers to demand reduction and water efficiency; and (ii) The importance of smart metering. <p>Whilst many of the individual regional WRMPs reference these areas, we feel strongly that both of these issues need to be seen in a market-wide context to ensure that investment plans and solutions are consistent across the whole market. There is a danger that if wholesalers take different approaches to smart meter roll out or to water efficiency incentivisation in the non-household sector, it will create greater disparity in customer experience between regions.</p>	<p>Our demand management strategy now includes all customers; household, non-household and developers and a target of 12% reduction by 2037-38 has been set to ensure efficiencies across the non-household sector.</p> <p>We recognise smart metering as a key enabler for promoting water efficiency and plan to replace all non-household meters with smart meters by 2035. The majority of these replacements will take place by 2030.</p>
312.2	<p>Demand reduction</p> <p>Non-household customers consume almost a third of the water used in England and we firmly believe that they have a role to play in meeting demand reduction targets. Many of the WRMPs and respective surveys touch on whether and to what extent demand reduction should be relied upon to bridge the projected demand/supply gap. We believe that it can, but it won't</p>	<p>We plan to reduce non-household demand by 12% by 2037-38 compared to 2019-20 in line with the latest guidance.</p> <p>We have noted the suggestions and our revised dWRMP24 includes proposal for raising awareness about and incentivising water efficiency in the non-household sector. We will be looking to work collaboratively with the retailers to reduce non-household consumption.</p>

Reference	Business Stream comment	Southern Water response
	<p>happen without considerable effort and investment from the water industry.</p> <p>At the moment, the non-household sector has relatively low levels of awareness of the water scarcity issue and customers are not terribly motivated to change their consumption behaviours. Whilst our ambition is that ultimately customers take responsibility for reducing their own consumption, we recognise that this will take time to achieve. In the meantime, in order to ensure that non-household customers play their role, it will require support from water industry stakeholders, in particular:</p> <ul style="list-style-type: none"> • consistent efforts nationwide to raise awareness of the issue and the consequences of doing nothing; • funding to directly support and incentivise non-household customers to reduce their consumption and to sustain behaviour change; and • collaboration between wholesalers and retailers to develop and deliver a range of solutions. <p>We are especially keen to work with wholesalers on this third bullet. Several wholesalers have attempted over the last few years to launch water efficiency incentive schemes, aimed at involving retailers in water efficiency delivery, but without significant success. From our perspective, the reasons were largely three-fold:</p> <ul style="list-style-type: none"> • the administrative requirements of each scheme were relatively complex and there was no uniformity in approach; • the level of the incentive was often insufficient to meet the cost of water efficiency intervention and make it worthwhile for all parties; and • the requirement to demonstrate demand reduction was impossible to meet without smart metering data being available. 	

Reference	Business Stream comment	Southern Water response
	<p>These are valuable lessons that should inform future collaboration. We suggest that a suite of standard collaboration options could be developed, jointly by wholesalers and retailers, (the RWG Water Efficiency Group would be the obvious vehicle), that would be common across the market. These common options need not be the only options offered by a wholesaler, but it would establish a 'baseline' across the market. These common options might include:</p> <ul style="list-style-type: none"> • Joint branding, with intervention funded by the wholesaler, but delivery could be by wholesaler/retailer/third party; • Grants or targeted voucher schemes for specific activities – e.g. fixing leaking toilets/taps/urinals; • One or more types of water efficiency incentive scheme – where wholesalers make funds available either for targeted activities, or on the basis of a £/Ml/day demand reduction, which would be more flexible in response to innovative proposals from retailers/third parties/customers; or • Auctions, in which bidders compete for funds to deliver a specific demand reduction (although this may need to come later with greater experience of the cost of delivery). <p>It seems likely that different collaborative options could be developed that would be appropriate to different customer groups, and could be geographically targeted at areas of greatest need, or to coincide with a domestic customer water efficiency programme. Options could be designed to be consistent across the market, but which build in flexibility to allow and support more innovative approaches. Collaborative schemes will however inevitably need a way of demonstrating delivery that is not dependent on granular consumption data (unless smart meters are part of the incentive). At least for a period, this might have to be on the basis of assumed</p>	

Reference	Business Stream comment	Southern Water response
	reduction per input/intervention (e.g. X litres per tap aerator etc.).	
312.3	<p>Smart Metering Key to our customers' experience and essential to the sustained delivery of demand reduction, is the availability of more granular consumption data. Not only will it help improve bill accuracy, but it will allow non-household customers to understand their consumption and to monitor the effectiveness of water efficiency action taken. We will also need better consumption data to demonstrate demand reduction commitment to Ofwat, to monitor progress against Defra targets and to 'prove' customer's change in behaviour.</p> <p>We recognise that Ofwat is encouraging wholesalers towards investment in smarter metering, but has stopped short of a performance commitment in this respect. We are concerned that in the absence of any policy direction from Government or a common incentive in PR24 to ensure a consistent, market wide metering strategy, especially for the roll out of smarter metering, regional differentiation in meter provision could increase, creating greater disparity in non-household customer experience. We are pleased to see that some wholesalers have embarked on smart metering rollout, or have made commitments to do this, but our key 'ask' is to ensure that respective wholesaler's levels of ambition, pace and focus of investment is consistent with a national market-wide picture.</p> <p>In conclusion, we would like to see specific commitments to non-household customers with respect to both of these important areas as the Business Plan is developed.</p>	As mentioned in our response to 312.1, we recognise smart metering as a key enabler for promoting water efficiency and plan to replace all non-household meters with smart meters by 2035. The majority of these replacements will take place by 2030.

Reference	Business Stream comment	Southern Water response
312.4	<p>Drought planning and management</p> <p>In addition to the key points above, we note that many of the WRMPs and survey questions touch on drought. We have been encouraged by the work of the RWG Drought Group in attempting to bring consistency and clarity to the rules and exceptions that apply under hosepipe bans/TUBs and Drought Order/NEUB restrictions. Similar to the need for a consistent approach to demand reduction and smart metering, this is also an area where collaboration and consistency is key. We see the value in the continuation of the RWG work to develop consistent policies and matrices showing the commonality and variation of restrictions, and would like to see this developed further into standard approaches to communications to retailers and non-household customers, including timing (with advance notice) and clarity on the ask on retailers.</p> <p>Similarly, a framework for targeted (drought-specific) demand reduction incentive schemes should be developed to set out the options available in various scenarios (e.g. NEUBs and the availability of smart meter data) that would allow greater foresight, consistency and ultimately effectiveness of such incentives. We appreciate the reactive nature and need for innovation in such circumstances but these efforts would enable quicker, consistent approaches that are more efficient in achieving our collective aims. Such guidance should also be aligned to a common framework for non-drought related efficiency incentives (as mentioned above).</p> <p>This feedback is consistent with our input into UKWIR as part of their update to the drought code of practice. While we see the need for this updated version, we recognise the value the RWG provides to compliment this, through specific practical guidance for wholesalers and retailers, that is subject to continuous development via the RWG. We would therefore</p>	<p>We will continue to include demand reduction through TUBs and NEUBs alongside our water efficiency and demand reduction measures as part of our drought management strategy.</p> <p>Details on how we will communicate these measures with customers and retailers during a drought are set out in our Drought Plan. The Drought plan also sets out in detail exemptions and the phasing of restrictions.</p> <p>We would welcome further work to develop consistent national approaches to these restrictions and use of smart meter data to better target and incentivise demand reduction during drought and will consider the outcomes of this research as we update and revise our Drought Plan.</p>

Reference	Business Stream comment	Southern Water response
	<p>encourage wholesalers to engage and contribute with the RWG Drought Group to further these aims.</p> <p>As a final point, it was very encouraging that wholesalers and Ofwat actively sought input from retailers in relation to the PR24 methodology, and the wholesaler/retailer workshops run last year were hugely useful in that respect. Some of the proposals in the Ofwat Methodology paper have the potential to make a very positive difference to the non-household market, and we would therefore be keen to see further joint wholesaler/retailer/Ofwat sessions as the detail of the various incentive mechanisms is developed. We would also be happy to discuss bilaterally.</p>	

7. Feedback by Chalk Stream Ltd, Broadlands Estate Salmon and Trout Fishery, River Test Salmon Group and Test and Itchen Association and our response

Reference	Chalk Stream fishing Ltd, Broadlands Estate Salmon and Trout Fishery, River Test Salmon Group, Test and Itchen Association feedback	Southern Water response
279.1	<p>I write regarding the above consultation in my capacity as chairman of Chalk Stream Fishing Ltd, Lessee's of Broadlands Estate Salmon and Trout Fishery (River Test), Chairman of the River Test Salmon Group and as a director of the Test & Itchen Association to express my concerns over the above WRMP consultation.</p> <p>The law requires that a consultation should 'let those who have a potential interest in the subject matter know in clear terms what the proposal is...,telling them enough... to enable them to make an intelligent response'. The relevant industry guidance in the Water Resources Planning Guideline is consistent with the law: 'You should be transparent in your methods, data assumptions, and decisions. This is so that customers, stakeholders, regulators and government can understand and comment on your plan'</p> <p>I do not believe that the Southern Water WRMP document currently achieves the requirement of these guidelines. Indeed, at some two thousand pages in length, it would seem to be an exercise in obfuscation rather than enlightenment of members of the public wishing to make an informed response to SW's long term water resource planning proposals.</p>	<p>We acknowledge that there is a large amount of information in our dWRMP24. This is because it needs to include the detail required by the WRPG and the direction set by the Secretary of State. We provided a technical report, more detailed technical annexes and a higher level and more accessible summary document as part of the dWRMP24 consultation.</p> <p>In support of the consultation, we held around 40 separate meetings and briefings to regulators, elected representatives, catchment stakeholders and the general public in which we responded to questions and feedback directly.</p>

Reference	Chalk Stream fishing Ltd, Broadlands Estate Salmon and Trout Fishery, River Test Salmon Group, Test and Itchen Association feedback	Southern Water response
279.2	<p>I also understand that the legal representatives of Wild Fish requested clarification on a considerable number of concerns regarding continued abstraction of the Candover, Itchen and Test and that this information be made available (in an intelligible format) by 2nd February 2023. This was not forthcoming until Friday 17th February when I received an email from Southern Water with the requested addendum attached – A mere 72 hours before closure of the consultation and a woefully inadequate amount of time in which to digest and respond to the information contained therein. Clearly, in the light of this information being forwarded so late, is there not a strong argument to extend the closing date for the consultation to give interested parties time to give due consideration to the additional material supplied?</p>	<p>We elected not to extend the consultation to ensure we could maintain alignment with the Regional Planning programme. We received a further response from Wild Fish on 6th April 2023 and responded via letter on 28th April 2023. Reflecting recent changes to our strategy for Hampshire, we will likely undertake a further consultation on our revised dWRMP24 and we would be happy to receive further feedback on our plans.</p>

Reference	Chalk Stream fishing Ltd, Broadlands Estate Salmon and Trout Fishery, River Test Salmon Group, Test and Itchen Association feedback	Southern Water response
279.3	<p>However, it is the lack of commitment to reducing continued excessive abstraction of the chalk streams that remains of greatest concern to me.</p> <p>The Section 20 agreement signed by Southern Water in the context of the 2018 inquiry into abstraction limits from the Candover, Itchen and Test included an objective 'not to require the Itchen and Candover Drought Orders after 2027 and only to require the Test Surface Water Drought Order or Permit after 2027 in extreme drought events (1-in-500 year drought severity)' From the WRMP plan it would seem this is no longer the objective of SW and Drought Orders are likely to continue to exert environmental damage on the already severely stressed chalk streams beyond this agreed deadline date, possibly into the mid 2030's and beyond...</p> <p>The failure of Southern Water to fulfil their obligations and agreements of the 2018 Section 20 ruling is deeply concerning to those of us with both business and environmental interests on these SAC and SSSI habitats. The potential threat from continued long-term water abstraction, particularly on the Lower Test, to the (irreplaceable) stocks of the genetically unique sub-species of Atlantic salmon found in the south east England's chalk streams was one of the main drivers of the Section 20 agreement; to afford long term protection to this species, the numbers of which are already in a critical state. This protection now seems to have been dismissed by Southern Water's lack of fulfilment to the Section 20 agreement in its entirety – no desalination plant, Havant Thicket reservoir now running years behind schedule and the main scheme to utilise water re-use/recycling now also seemingly under threat of being scrapped, and yet abstraction being set to continue post 2027 (see Supplementary Addendum Annex 1) as detailed below:</p>	<p>We have included details on the use of our drought permits and drought orders in Annex 26 of the revised dWRMP24.</p>

Reference	Chalk Stream fishing Ltd, Broadlands Estate Salmon and Trout Fishery, River Test Salmon Group, Test and Itchen Association feedback	Southern Water response
	<ul style="list-style-type: none"> - Delaying achieving 1-in-500 year drought resilience to 2050 and longer reliance on drought permits and orders until 2052 - Removing the water recycling scheme to support refill of Havant Thicket Reservoir from our strategy <p>To those of us who sat on various Southern Water steering groups in the lead up to the Section 20 agreement, the failure of Southern Water to enact any of its agreed obligations comes as little or no surprise. It has always been clear that Southern Water's reliance on continued abstraction from the Hampshire chalk streams represented a cheap and readily available option over longer term strategic investment, regardless of the potential negative environmental impact on both the habit and threatened species that live within them.</p> <p>So, in conclusion I, along with many other interested parties, are highly sceptical that many of the timelines proposed in this WRMP will be executed as stated, based on the previous performance of Southern Water.</p>	

8. Feedback by Forestry Commission and our response

Reference	Forestry Commission feedback	Southern Water response
291.1	<p>We welcome the great efforts and crucial importance of securing water supply for the future and the consideration that has been given to the environment as part of this. The delivery of this plan can have a very significant effect on nature and climate, for the worse or for the better depending on how it is designed and delivered. We are encouraged by the plan’s consideration of how the plan can deliver environmental gains but are concerned by the potential loss and impacts on ancient woodland and non-ancient woodland/trees that could be caused by the infrastructure proposed as part of delivering this plan.</p> <p>The delivery of this plan will take place during crucial decades for confronting the climate and ecological emergencies required to minimise irreversible impacts on people and the environment at every scale. We encourage that any development, particularly at this widespread strategic scale and those in the public interest, to actively deliver a meaningful contribution to meeting this challenge.</p> <p>Indeed, one of the fundamental drivers identified for needing this plan in the first place relates to increased pressure from climate change which is directly connected to how human activity, including development, is delivered, and strategies on this scale can have a lasting legacy for generations to come. The advice in this letter intends to help strengthen these plans in their protection, enhancement and expansion of our invaluable trees and woodland as part of delivering the plans’ objectives. This advice relates to the WRSE Reginal Plan, and the Water Resource Management Plans also out for consultation for:</p> <ul style="list-style-type: none"> • Affinity Water • Portsmouth Water (we have also sent separate comments regarding the Portsmouth Water WRMP) • SES Water • South East Water 	<p>Thank you for your feedback on our dWRMP24. We have continued to work alongside WRSE in development of our revised dWRMP24. We have addressed your comments in the sections below.</p>

Reference	Forestry Commission feedback	Southern Water response
	<ul style="list-style-type: none"> • Southern Water • Thames Water <p>Overarching Comments</p> <p>Our overarching advice can be summarised as:</p> <ul style="list-style-type: none"> • Comment 1: Development associated with the Regional Plan is expected to result in the direct loss and impact on ancient woodland sites. The Regional Plan should exhaust efforts to avoid impacts on ancient woodland, ancient trees and veteran trees. • Comment 2: We encourage a clear commitment to being nature positive and delivering targets for measurable environmental gains, including biodiversity net gain, on all development associated with the plan. • Comment 3: We encourage the exploration and adoption of specific measurable targets associated with woodland/tree cover to contribute to meeting the national tree canopy target being considered by Government. • Comment 4: All efforts should be taken to avoid loss of other trees and woodland, especially where they complement the wider network of ancient woodland, and we encourage maximising the use of trees and woodland (and other nature-based solutions), to deliver multi-functional benefits. • Comment 5: We are aware that a considerable proportion of South East drinking water resources are derived from chalk aquifers. We are surprised that none of the plans mentioned the challenge of nitrate levels within these aquifers and how they will be addressed into the future. <p>Please see below for more detailed advice regarding each of these comments and further advice that we suggest is considered when developing future iterations of the Regional Plan and WRMPs (hereafter referred to as 'the Plans' unless otherwise stated).</p>	

Reference	Forestry Commission feedback	Southern Water response
291.2	<p>Detailed comments</p> <p>Comment 1: Development associated with the Plans are expected to result in the direct loss and impact on ancient woodland. The Plans should exhaust efforts to avoid impacts on ancient woodland, ancient trees and veteran trees.</p> <p>Ancient woodlands, ancient trees and veteran trees are irreplaceable habitats which have established over centuries that can act as key parts of complex and connected ecosystems. They are part of our cultural heritage that are the legacy of the past and for future generations. We would like to highlight our concern regarding the risk of loss and detrimental impacts to ancient woodland sites from other development proposed by the Plans. Paragraph 180(c) of the NPPF sets out that development resulting in the loss or deterioration of irreplaceable habitats should be refused unless there are wholly exceptional reasons and a suitable compensation strategy exists. In considering the impacts of the development on Ancient Woodland, Ancient and Veteran trees, the planning authority should consider direct and indirect impacts resulting from both construction and operational phases.</p> <p>Likewise, for developments covered under the Planning Act 2008, the draft Development Planning Statement for Water (2018) states:</p> <p>‘4.3.14. Ancient Woodland is a valuable biodiversity resource both for its diversity of species and for its longevity as woodland. Once lost it cannot be recreated.</p> <p>The Secretary of State should not grant development consent for any development that would result in the loss or deterioration of irreplaceable habitats including ancient woodland and the loss of ancient or veteran trees found outside ancient woodland, unless there are wholly exceptional reasons, for example where the need for and other public benefits of the development, in that location, would clearly outweigh the loss or deterioration of the habitat, and a suitable compensation strategy exists.’</p>	<p>Comment noted. The Environmental Report of the revised dWRMP24 has been amended to ensure the consistent treatment of designated conservation and landscape sites and features within the SEA of the revised preferred options. This includes SSSIs, SSSI risk zones, MCZs, NNRs, Ancient Woodlands, National parks and AONBs, and supplements the range of features already considered when identifying, describing and evaluating likely significant effects. This includes amendments to Appendix E (the baseline information) to reflect the range of designated sites and features outlined.</p>

Reference**Forestry Commission feedback****Southern Water response**

Please refer to Natural England and Forestry Commission joint Standing Advice for Ancient Woodland and Ancient and Veteran Trees, updated in January 2022. The Standing Advice can be a material consideration for planning decisions and contains advice and guidance on assessing the effects of development, and how to avoid and mitigate impacts. It also includes an Assessment Guide which can help planners assess the impact of the proposed development on ancient woodland or ancient and veteran trees in line with the NPPF. We would encourage the specific reference for development to have regard to the standing advice, highlighting direct and indirect impacts and the Assessment Guide that is available to help.

Based on the broad locations being proposed by the Plan, this includes, but is not limited to, potential loss and impacts from Broad Oak Reservoir, Off River Adur Reservoir (depending on location) and SESRO. These projects should be considered in the context of the substantial direct loss of Ancient Woodland already occurring as a result of the Havant Thicket Reservoir. The SEA does not appear to be adequately acknowledge this loss in relation to biodiversity flora and fauna impacts on the Best Value option (Table 5.2). It is unclear why this has been omitted as this could skew the baseline for appraising options.

The construction of Havant Thicket Reservoir is resulting in the direct loss of 15.2ha of ancient woodland. While we appreciate the public needs for this reservoir, we are particularly concerned by the additional indirect loss of further ancient woodland for access to establish and then maintain the site (especially as routes which could have avoided this loss were available). While we support the compensation package which is being delivered, we must advise that the importance of full canopy ancient woodland does not seem to be recognised and the package includes management of existing woodlands already owned by water utilities which have been neglected for decades.

Reference	Forestry Commission feedback	Southern Water response
	<p>We would strongly encourage the Plans to exhaust all reasonable options of reservoirs and other development associated with the Plans, in terms of their location, design and construction/operation, to avoid and minimise any loss of ancient woodland, avoid indirect loss of ancient woodland, ensure that any indirect impact on adjacent ancient woodland is fully evaluated and mitigated. The standing advice also makes reference to a robust compensatory package of full canopy woodland for any loss of ancient woodland. We would advise that such a compensatory package should be substantial, seeking to buffer and connect nearby ancient woodland to enhance the overall resilience of the wider woodland infrastructure and treescape to climate change and deliver a multitude of public benefits (including biodiversity, water quality and public health benefits) in designs which are self-supporting. As part of this, we would welcome a clear commitment to avoid impacts on ancient woodland.</p> <p>Veteran Trees are also irreplaceable so their loss should be avoided and treated the same as Ancient Woodland. We would welcome within the plan the statement to establish the next generation of veterans.</p> <p>We welcome the Plans' reference to achieving environmental gains, including biodiversity net gain. Before this can be achieved, existing habitats need to be protected as far as possible, with irreplaceable habitats being among the highest priorities to protect. This is needed before overall environmental gains are possible to achieve.</p>	
291.3	<p>Comment 2: Establish a clear commitment to being nature positive and delivering targets for measurable environmental gains, including BNG, on all development associated with the Plan.</p> <p>The reference to the Plan being able to contribute to environmental gains and BNG is welcome. However, we question the consultation document's claim that 'The Best Value Plan creates more natural capital, improves biodiversity, has less overall impact on the environment' due to the overall loss expected, including irreplaceable habitat'.</p>	<p>We are developing our Environment Strategy which has an environmental outcome to increase biodiversity. We are developing a BNG strategy to understand our needs and to match these with various supply options. At the moment we are focussing on our legal obligations to deliver at least 10% BNG for development requiring planning permission, but will also explore the impact of applying a BNG target to other schemes such as those considered permitted development. We are active members of the Local Nature Partnerships across the South East and as such have good connections into the emerging Local Nature Recovery Strategies. We are feeding data and mapping information into the process and will use the strategies to inform our mitigation and compensation and the management of our own estate.</p>

For example, we note that Technical Annex 2 states:

'Many of the infrastructure options in the Best Value Plan (pre-2050) result in a net loss of BNG as a result of temporary and permanent loss of habitats as a result of the construction of the options. However, the BNG results for the draft Regional Plan are an indicator of each options' impact on BNG as their overall net unit change for BNG does not include the catchment management options which have the potential to provide BNG and additional benefits'.

This suggests that there is some uncertainty on how or if BNG will be delivered overall, which we appreciate is likely to be developed as part of the next stages of the plan's development.

For development covered by the Town and Country Planning Act, Paragraph 174(d) of the NPPF sets out that planning (policies and) decisions should minimise impacts on and provide net gains for biodiversity. Paragraph 180(d) encourages development design to integrate opportunities to improve biodiversity, especially where this can secure net gains for biodiversity. A requirement for most development to deliver a minimum of 10% BNG is expected to become mandatory from November 2023. The WRSE partners should consider the wide range of benefits trees, hedgerows and woodlands provide as part of delivering good practice biodiversity net gain requirements.

For development covered by the Planning Act 2008 (NSIPs), the draft Development Planning Statement for Water (2018) states:

4.3.15. Development proposals potentially provide many opportunities for building in beneficial biodiversity or geological features as part of good design or delivering environmental net gain. When considering proposals, the Secretary of State should consider whether the applicant has maximised such opportunities in and around developments.

Reference	Forestry Commission feedback	Southern Water response
	<p>The Secretary of State may use requirements or planning obligations where appropriate in order to ensure that such benefits are delivered.</p> <p>We also highlight that it is difficult to truly achieve environmental gain if irreplaceable habitat is being permanently lost, As acknowledged in 'Technical Annex 2: Our draft Reginal Plan proposals' (November 2022), Ancient woodland loss cannot be accounted for in the BNG metric. The BNG Metric User Guide, Rule 3 states that 'Trading down' must be avoided. Losses of habitat are to be compensated for on a 'like for like' or 'like for better' basis. New or restored habitats should aim to achieve a higher distinctiveness and/or condition than those lost. Losses of irreplaceable or very high distinctiveness habitat cannot adequately be accounted for through the metric' and 'Bespoke compensation needs to be agreed with the relevant decision maker for any losses or impacts to these habitats.'</p> <p>We ask that we are consulted on this to help develop compensation that is meaningful, targeted and of optimal value.</p> <p>Given the above, we encourage the following be considered in the next stages of the Plans' development:</p> <ul style="list-style-type: none"> • A direct commitment for plans to be nature positive or to contribute to leaving nature in a stronger position than we found it, in line with the Government's 25 Year Environment Plan. • Commitments within the plan to achieve a specific minimum net gain target in line with good practice regarding BNG design (i.e. about the overall design, not just the metric results), in consultation with Natural England and complements local priorities including local nature recovery strategies and in consultation with local authorities/LNRS groups. • Ensure alignment with other strategic land-use plans including local nature recovery strategies which water companies are well placed to positively contribute to and align with as part of any mitigation/compensation efforts. 	

Reference	Forestry Commission feedback	Southern Water response
	<p>We welcome the commitment to explore this in more detail as part of the water companies' WRMP24 SEA process' (SEA page 115).</p>	
291.4	<p>Comment 3: We encourage the exploration and adoption of specific measurable targets associated with woodland/tree cover to contribute to meeting the national tree canopy target being considered by Government.</p> <p>We welcome the consideration of BNG and Natural Capital assessment as part of the decision making for the Plans options. As part of the Environment Act, there is a proposal being considered by Government to set a legally binding target to increase national tree cover from 14.5% to 16.5% by 2050. A large-scale Regional Plan like this can lead by example to ensure overall gain of tree/woodland cover.</p> <p>We appreciate this target is still emerging and the consultation document will have been prepared before release of this. As part of the next stages of developing the Regional Plan and WRMPs, we encourage the WRSE to anticipate this by directly committing to a tree canopy cover increase up to 2050, with appropriate management in place to ensure this is delivered in practice. As part of this, the supporting assessments including the SEA and Environment Assessment could be improved to directly consider tree canopy cover to inform the options being appraised.</p>	<p>We have undertaken a baseline assessment of our estate with the Wildlife Trust to understand the current biodiversity value and opportunities for BNG and carbon sequestration uplift. This information will be used to inform mitigation/compensation that can be delivered on our own land. We will also draw on local studies such as Sussex Nature Partnerships woodland opportunity mapping. We are very conscious that we need to plant the right tree in the right place and will work with key stakeholders to ensure this is achieved where trees can help us meet deliverables and deliver wider benefit.</p> <p>We are currently exploring a trial to create a number of mini forests (Miyawaki) on our own estate so that we can understand the process and any risks to our operational plans and processes.</p>

Reference	Forestry Commission feedback	Southern Water response
291.5	<p>Comment 4: All efforts should be taken to avoid loss of other trees and woodland, especially where they complement the wider network of ancient woodland, and we encourage maximising the use of trees and woodland (and other nature-based solutions), to deliver multi-functional benefits.</p> <p>Trees and woodlands provide many benefits to society such as storing carbon, regulating temperatures, strengthening flood resilience and reducing noise and air pollution.[1] Paragraph 131 of the NPPF seeks to ensure new streets are tree lined, that opportunities should be taken to incorporate trees elsewhere in developments, and that existing trees are retained wherever possible. Appropriate measures should be in place to secure the long-term maintenance of newly planted trees. The Forestry Commission may be able to give further support in developing appropriate conditions in relation to woodland creation, management or mitigation.</p> <p>We encourage the Plans to maximise the multi-functional benefits provided by trees and woodlands, including for water quality improvements and sustainable flood management. We would welcome direct consideration of this within the Environment Assessment and SEA to ensure these benefits are fully regarded. A good example of maximizing the value of trees and woodlands is in the Friston forest on the South Downs was created to avoid nutrients entering Eastbourne’s water supply (the water derived from this chalk ‘block’ does not have the nitrate levels now so common in the wider chalk aquifer). While it’s unlikely we will see the scale of woodland creation demonstrated by Friston Forest in South East England, the benefits of targeted woodland creation in improving water quality and managing flood flows are significant.</p> <p>Carbon neutrality: Many organisations, including WRSE partners, are seeking to make their operations ‘net zero’ by a particular date. We suggest there are dual benefits of using trees and woodland to help improve water quality while also sequestering carbon. The Forestry Commission remain happy</p>	<p>We have undertaken a baseline assessment of our estate with the Wildlife Trust to understand the current biodiversity value and opportunities for BNG and carbon sequestration uplift. This information will be used to inform mitigation/compensation that can be delivered on our own land. We will also draw on local studies such as Sussex Nature Partnerships woodland opportunity mapping. We are very conscious that we need to plant the right tree in the right place and will work with key stakeholders to ensure this is achieved where trees can help us meet deliverables and deliver wider benefit.</p> <p>We are currently exploring a trial to create a number of mini forests (Miyawaki) on our own estate so that we can understand the process and any risks to our operational plans and processes.</p>

Reference	Forestry Commission feedback	Southern Water response
291.6	<p>Comment 5: We are aware that a considerable proportion of South East drinking water resources are derived from chalk aquifers and are surprised that none of the plans mention the challenge of nitrate levels within these aquifers and how they will be addressed into the future.</p> <p>We would like to draw your attention to work we have done in partnership with Portsmouth Water regarding:</p> <p>Nitrate ‘spikes’: for several years to explore how targeted woodland creation could help address the ‘spikes’ in nutrients and clay particles in water received at some bore holes shortly after heavy rain. Portsmouth water’s geologist at the time highlighted how heavy rain can result in surface water flowing across chalk downland, especially where there is a ‘clay cap’, in doing so this water collects nitrates and clay particles and can reach boreholes within days (or less) via dry valleys or Karstic features in the chalk; one water engineer described the impact as ‘turning his Evian into ginger beer’. This creates ‘spikes’ of poor water quality meaning this water has to be treated to meet drinking water standards. Such treatment is expensive in both capital investment and running costs. Hence we were exploring how targeted woodlands can act to filter such ‘surface water flows’ before they enter Karstic features.</p> <p>Base level of nitrate in chalk aquifers: fertiliser has been applied to a significant proportion of the chalk downs for several decades. Some of this has leached into that aquifer, and other than via Karstic features outlined above, has been percolating very slowly through the aquifer. Hence, enhanced nitrate levels are likely from chalk aquifer water sources for several decades.</p> <p>It would be helpful to consider the challenges posed and outline how these can be addressed in the Regional and WRMP.</p>	<p>The nitrate and other water quality challenges we face are predominantly covered by our WINEP and we are currently developing detailed plans for managing these challenges.</p> <p>These plans are summarised in our Catchment First strategy included in Annex 9 of our revised dWRMP24.</p>

Reference	Forestry Commission feedback	Southern Water response
291.7	<p>Additional Comments</p> <p>Strategic Environment Assessment</p> <p>We welcome the consideration of impacts on ancient woodland and priority habitats, and nature recovery, within the SEA Framework (Table 3.1). We welcome the commitment in the SEA regarding the consideration of:</p> <p>'Opportunities for habitat creation and habitat enhancement will be further investigated through WRMP24 and options design'; and</p> <p>'Opportunities for BNG and links with nature recovery networks will be further investigated at the WRMP24 level'</p> <p>As part of future iterations of the Regional Plan, we advise that the SEA Framework could be strengthened by considering the following:</p> <ul style="list-style-type: none"> <li>• Appraise options against their potential to actively contribute to nature recovery and enhancement, not just to avoid impacts <li>• Specifically consider veteran and ancient tree impacts as these are not mentioned. Policies within the Regional Plan/WRMPs to avoid impacts on these irreplaceable features as far as possible are encouraged <li>• We welcome the mention of carbon sequestration within the Climatic Factors SEA Topic and its consideration of whether it is affected. This could be stronger by specifically considering how plan options could make it worse (e.g. from woodland loss) and how efforts to achieve environmental gains could contribute to increasing carbon sequestration. For example, through woodland creation: Woodland Creation Case Studies: Helping local authorities respond to the climate emergency - GOV.UK (www.gov.uk) and the Woodland Carbon Code: The Woodland Carbon Code scheme for buyers and landowners - GOV.UK (www.gov.uk) In particular, we would encourage that this is considered as part of mitigation required in Table 5.2. 	<p>The comments are noted.</p>

Reference	Forestry Commission feedback	Southern Water response
	<ul style="list-style-type: none"> • ‘Increase resilience and reduce flood risk’ could be improved by using net gains that are targeted at flood risk benefits, using nature-based solutions • ‘Reduce vulnerability to climate change risks and hazards’ could be improved by considering net gains and nature based solutions that contribute to resilience • Consider impacts and provision of green infrastructure, including trees and woodlands as part of other factors such as population and health. <p>We note that the Post 2050 Best Value Option table 5.6 doesn’t mention ancient woodland or woodland more generally. We appreciate that there are some unknowns with the plan but we would be surprised if there wasn’t a risk to impacting woodland sites so suggest this is included here. We also highlight the above comments regarding environmental/SEA assessments for each WRMP where they are relevant.</p> <p>The SEA makes reference to: ‘Use of directional drilling under sensitive assets such as river, motorways, railway lines and certain designated sites.’ This option should be one considered for Ancient Woodland to avoid open trenches or damage to the soil profile of the ancient woodland. There will need to be consideration for root depths on any potential sites, particularly of veteran trees.</p>	

9. Feedback by Hampshire and Isle of Wight Wildlife Trust and our response

Reference	Hampshire & Isle of Wight Wildlife Trust feedback	Southern Water response
287.1	<p>Hampshire & Isle of Wight Wildlife Trust is increasingly concerned about the management of our collective water resources as we see pressures from abstraction and pollution on legally protected and important sites for wildlife, including some of the Trust’s nature reserves and the internationally renowned and legally protected chalk streams. We are pleased to see that the Southern Water Resources Management Plan takes steps to reduce reliance on abstraction from our chalk streams by tackling leaks and implementing water efficiency measures. However, we consider that the plan must go further to place the environmental limits of our river catchments at the heart of decision-making and ensure that the highest environmental ambition scenario is delivered.</p> <p>We have concerns that the ‘best-value approach’ does not effectively consider the environmental impacts and recommend a natural capital approach to cost benefit assessments of all investments. Furthermore, the best-value approach could be overruled by customer, stakeholder and shareholder views which could further dampen environmental ambition – something we cannot afford to do.</p> <p>Currently nearly a fifth of our surface waters, and over a quarter of groundwaters, do not have enough water to protect the environment and to meet the needs of fish and other aquatic life, and this situation will only worsen with climate change and increases in demand.</p>	<p>We are using natural and social capital metrics to inform our decision-making. One way this is being done is by embedding these metrics into our risk and value asset lifecycle process. This ensures best value options are considered alongside lowest cost and enables the value of catchment and nature-based solutions to be fully understood and compared with traditional ‘grey’ infrastructure solutions. We are now planning to extend this approach to the whole process so that natural and social capital is considered at every stage and we can use metrics linked to benefits delivered to inform our natural capital accounts.</p> <p>As part of our WINEP, we are undertaking a number of investigations assessing the potential impacts of our abstractions on the local environment. Findings from these investigations will lead to measures to mitigate any impact, including ecological resilience schemes.</p>
287.2	<p>Reducing abstraction from our precious chalk streams</p> <p>One of the Trust’s key priorities is to encourage Southern Water to vastly reduce their reliance on abstraction from our chalk streams, especially the designated River Itchen SAC. With climate change increasing the frequency and severity of droughts, we must see accelerated plans to develop long-term, more sustainable, solutions that rapidly reduce abstraction and eliminate the use of drought permits.</p>	<p>We are trying to progress our alternative options as soon as possible. Large infrastructure projects tend to have long lead times.</p> <p>In our updated Environmental Destination profiles, we have allowed for abstraction from sensitive sites such as the Itchen and Pulborough to be completely stopped over time.</p>

Reference**Hampshire & Isle of Wight Wildlife Trust feedback**

While we welcome supply schemes that will reduce unsustainable abstraction from chalk groundwater and meet environmental flow targets, we consider that they must reduce reliance on short-term mitigation measures in future and provide better long-term resilience for our internationally important chalk streams.

It's vital that Southern Water secure an alternative water supply as soon as possible to protect our chalk streams, yet the plan outlines that no additional large scale water resource solutions will be available until early 2030. We would like to reemphasise that under Section 20, Southern Water are legally required to use all best endeavours to find an alternate water resource to abstraction from the River Itchen.

We are pleased to see that the Isle of Wight, River Itchen and Upper Test are high priority catchments and will be prioritised for abstraction reduction. However, it is currently unclear to what extent abstraction will be reduced and whether the scenario exceeds the minimum environmental requirements set out in the EA's BAU+ scenario. BAU+ represents the minimum level regulators expect water companies to plan for through their WRMPs, whereas the enhanced scenario considers additional long-term requirements for sites with environmental designations, principal salmon rivers, and chalk streams. We would expect to see a clearer commitment to applying the most sensitive flow constraints on these rivers.

We are very concerned that Southern Water will continue to use drought permits up until 2040. We remain unconvinced that the drought permit won't have a detrimental impact on the internationally renowned and legally protected chalk streams such as the River Itchen SAC and SSSI. Where there is uncertainty in the impacts on designated sites, Southern Water should adopt the precautionary principle ensuring the needs of the environment are being met until the evidence shows that any additional abstraction will not result in unacceptable impacts on it.

Southern Water response

We are also aiming to achieve a level of resilience whereby we will only need to use drought permits/orders if we encounter a drought of more than 1-in-500 year severity.

Reference	Hampshire & Isle of Wight Wildlife Trust feedback	Southern Water response
	<p>The Section 20 agreement signed by Southern Water Services Limited in the context of the 2018 inquiry into abstraction limits from the Candover, Itchen and Test included an objective: ‘not to require the Itchen and Candover Drought orders after 2027 and only to require the Test Surface Water Drought Order or Permit after 2027 in extreme drought events (1-in-500 year drought severity)’. However, evidence from WildFish suggests this no longer the objective and that drought orders in excess of that objective are now likely to be required well beyond 2027 until the Havant Thicket Reservoir and associated projects are completed (early to mid 2030’s). Until the Havant Thicket related supply proposals are in place, the substantial 1-in-500 year baseline deficit from 2025-26 onwards will be met primarily by drought order abstraction from the Candover, Itchen and Test. This means the internationally important chalk streams will bear the brunt of the drought deficit - with huge potential environmental costs - for far longer than was envisaged in the Section 20 agreement.</p> <p>This is not presented in a transparent way in Southern Water’s dWRMP consultation documents as there is no clear information as to the levels of abstraction from the Candover, Itchen, or Test that is anticipated in the various drought scenarios.</p> <p>We must strongly reiterate the importance of water efficiency measures, reducing leakage of supply pipes, water recycling and bulk water transfers to ensure that abstraction to a potentially damagingly low HOF level is truly a last resort measure.</p>	

Reference	Hampshire & Isle of Wight Wildlife Trust feedback	Southern Water response
287.3	<p>House-pipe bans and Temporary Use Bans</p> <p>The Trust would like to raise concerns about Southern Water’s plans to reduce the frequency of hosepipe bans and TUBs during droughts. The Southern Water Summary document on page 24 indicated a proposal to reduce the use of TUBs from 1-in-5 years to 1-in-10 years from 2030 onwards.</p> <p>However, as Southern Water intends to continue to use drought permits on our chalk rivers, including the Test and Itchen up until 2040, we consider that Southern Water should continue to rely upon hosepipe bans and TUBs during droughts from 2030 onwards. The Southern Water Options Appraisal confirmed that retaining the TUBs saves 4.01Ml/day, which would otherwise be abstracted from our sensitive rivers during periods of drought.</p> <p>It is inappropriate for Southern Water to trade-off the inconvenience of hosepipe bans for the public directly at the expense of the ecological viability of our precious chalk streams during drought conditions.</p>	<p>Our target level of service for TUBs remains 1-in-10 year and has been supported by customers over the last two planning cycles. The licence changes to our River Test and River Itchen abstractions introduced in 2019 and the actions we have agreed with the EA as part of our Section 20 agreement mean that, based on our assessment of flows in the River Test, we are likely to implement more frequent TUBs in practice than our target. This is likely to be the case whilst we are reliant on the River Test Drought Permit to maintain supplies.</p> <p>In the longer term, as alternative supplies become available, we expect to develop sufficient capacity (e.g. through the HWTWRP and/or T2ST) to improve back to our target levels of service alongside reducing our abstractions from the River Test and River Itchen in line with our Environmental Ambition.</p> <p>We have provided further information on this in Annex 26 of our revised dWRMP24 which covers our drought permits and drought orders.</p>
287.4	<p>Reducing personal and non-household water consumption</p> <p>We are pleased to see Southern Water exceed Defra’s national target to reduce household consumption to 110 litres per person per day by 2050 and forecast a reduction to 109l/p/d. We also applaud Southern Water’s ambition to reduce daily usage to 100 litres per person per day by 2040 and urge them to put these measures in place urgently to reduce the abstraction needed from our precious chalk streams.</p> <p>Around 25-30% of public water supplies are used outside the home, for example in schools, shops, gyms and businesses. There is a huge opportunity to reduce this non-household (NHH) demand. The government’s Environmental Improvement Plan confirms non-household use should be reduced by 9% by 2038 and 15% by 2050 as a contribution towards achieving Environment Act targets, so the plan should include more detail on how this will be supported. Ofwat, for the first time, has included a specific performance commitment to reduce non-household demand.</p>	<p>We are aiming to achieve a PCC of 110l/h/d by 2045 under dry year conditions. We have also considered a more ambitious target 98l/h/d by 2045 under dry year conditions.</p> <p>We are also aiming to reduce non-household demand by 12% by 2037-38, compared to 2019-20 levels.</p> <p>The success of demand management initiatives depends on behaviour change in relation to water use. Aiming for higher targets than those required by regulatory guidance carries additional deliverability risk. We have taken this into account in setting our demand management targets.</p>

Reference	Hampshire & Isle of Wight Wildlife Trust feedback	Southern Water response
	Reducing personal and non-household water use should be a priority to prevent unnecessary and damaging abstraction from important and legally protected chalk streams across the region.	
287.5	<p>Leakage reduction We are pleased to see Southern Water aims to exceed the government ambition to half leakages by 2050 from 2017-18 baseline. We urge Southern Water to commit to its higher target of 62% leakage reduction by 2050.</p> <p>While three-quarters of UK water companies are reportedly on track to meet leakage targets according to Ofwat, Southern Water are currently failing to meet the government target. We must see real progress on tackling leakage reductions over the period of this plan in order to reach Southern Water’s ambitious target.</p>	We are aiming to reduce leakage by at least 50% by 2050. We have also tested 62% leakage reduction by 2050. This is discussed in our revised dWRMP24.
287.6	<p>Reducing the water footprint of new developments A proportion of the potential supply demand deficits in the plan are driven by the need to provide water to support new developments. However, there is no reflection of the role that water neutrality could play. We consider the plans should promote a position where any large-scale developments should be water neutral, particularly in areas with water deficits and where abstraction licenses are being capped or reduced to protect legally protected habitats.</p> <p>Southern Water should be proactively working with local authorities and developers to minimise the water demand footprint of new development focusing on those areas under greatest growth, abstraction and environmental pressure.</p>	<p>We have taken a proactive role in the development of the water neutrality principles set out by Waterwise. We are Co-Chair of the Waterwise Strategic Objective group on water neutrality and we are taking the lessons learnt Natural England’s Position Statement on Water Neutrality in Sussex North WRZ to inform how the principles could be used across our area of operation.</p> <p>We are also leading the Water Sector stream of the Enabling Water Smart Communities Project, funded by the Ofwat Innovation Fund, to develop approaches which unlock the potential of grey water recycling and rainwater harvesting as well as innovation for capture of surface water.</p> <p>In addition we have developed working relationships with the House Builders Federation (HBF) and Land Promoters and Developers Federation (LPDF) and are feeding into the Future Homes Hub (FHH) to inform the development of water efficient homes for a water resilient future. For more information on how we are embracing the opportunities around water neutrality you can join our group by emailing waterneutrality@southernwater.co.uk for a quarterly webinar and monthly newsletter.</p>

Reference	Hampshire & Isle of Wight Wildlife Trust feedback	Southern Water response
287.7	<p>Delivering more for nature – going beyond 10% Biodiversity Net Gain</p> <p>While we are pleased to see an increased weight on environmental decisions within the plan, we want Southern Water to go further to put the environment at the heart of decision making, invest in nature-based solutions, incorporating a natural capital approach to cost benefit assessments, and adopting a target to exceed BNG requirements.</p> <p>Under the Environment Act (2021) any works requiring planning permission are required to leave nature in a better state than which it was found, through BNG. While we see BNG is referenced in the WRMP, there is no target to go beyond the Government’s mandatory 10% net gain.</p> <p>We urge Southern Water to adopt a target of 20% BNG for the Price Review, in line with the industry’s commitment to ‘champion measures through which water companies can enshrine what it means to operate in the public interest’. Showing leadership by adopting a target greater than the minimum 10% is entirely fitting for a sector that benefits from a healthy water environment.</p> <p>No reference is made in the plan to Local Nature Recovery Strategies; these should be used to guide delivery of BNG to ensure that preferred options contribute more strategically to the recovery of nature.</p>	<p>Comment noted. We are developing our Environment Strategy which has an environmental outcome to increase biodiversity. We are developing a BNG strategy to understand our needs and to match these with various supply options. At the moment, we are focussing on our legal obligations to deliver at least 10% BNG for development requiring planning permission, but will also explore the impact of applying a BNG target to other schemes such as those considered permitted development. We are active members of the Local Nature Partnerships across the South East and as such have good connections into the emerging Local Nature Recovery Strategies. We are feeding data and mapping information into the process and will use the strategies to inform our mitigation and compensation and the management of our own estate.</p>

Reference	Hampshire & Isle of Wight Wildlife Trust feedback	Southern Water response
287.8	<p>Nature-based solutions</p> <p>We are pleased that the plan highlights the value of nature-based solutions across whole river catchments for securing water resources but also for providing multiple benefits – reducing pollution, lessening flood risk or boosting biodiversity. We are pleased that the plan seeks to develop the evidence base for nature-based solutions to inform future water resource planning.</p> <p>To drive natural capital increases, we must overlap with natural capital approaches for water quality and flood risk management, as similar interventions (such as wetland habitat creation) can improve water quality, regulate peak and low flows and reduce flooding. A ‘multiple benefits’ approach to investment in natural capital for water related benefits is therefore an efficient approach. There is also immense opportunity for water companies to invest in nature-based solutions in order to minimise business risks that arise from depleting the natural capital assets upon which they depend and to ensure the natural assets are resilient to future challenges.</p> <p>The plan could also do more to factor in that the nature-based solution schemes are important from a climate perspective to help river systems to adapt to a changing climate. We would also urge the plan to adopt a natural capital approach to cost benefit assessments for all investment rather than decisions made on financial costs alone.</p>	<p>We are using natural and social capital metrics to inform our decision-making. One way this is being done is by embedding these metrics into our risk and value asset lifecycle process. This ensures best value options are considered alongside lowest cost and enables the value of catchment and nature based solutions to be fully understood and compared with traditional ‘grey’ infrastructure solutions. We are now planning to extend this approach to the whole process so that natural and social capital is considered at every stage and we can use metrics linked to benefits delivered to inform our natural capital accounts.</p>
287.9	<p>Hampshire Desalination plant</p> <p>We are encouraged that Southern Water is no longer progressing the Desalination Plant proposal on the Solent, for which we raised serious concerns about the impact the brine discharge would have on wildlife and the designated areas of the Solent.</p>	<p>Desalination on the Southampton coast continues to be excluded from our revised dWRMP24.</p>

Reference	Hampshire & Isle of Wight Wildlife Trust feedback	Southern Water response
287.10	<p>Hampshire Water Transfer and Water Recycling Project' at Havant Thicket Reservoir</p> <p>The Trust has been involved in reviewing the Havant Thicket Reservoir proposals for several years, including through the Havant Thicket Stakeholder Board.</p> <p>We have been made aware of a number of concerns raised by the community regarding the environmental impact of 'Hampshire Water Transfer and Water Recycling Project' proposals for Havant Thicket. We therefore seek firm commitments, supported by robust evidence, that the proposals would not adversely impact the River Itchen SAC or Chichester and Langstone Harbours SPA, the Solent Maritime SAC, the Solent and Southampton Water SPA and Ramsar and, Portsmouth Harbour SPA and Ramsar.</p>	<p>The need for HWTWRP is driven by the requirement from the EA and Natural England to reduce the amount of water we take from the environment in Hampshire, particularly the rivers Test and Itchen. This is aimed at protecting, and where possible, enhancing the environment.</p> <p>In the absence of any options to take any more water from rivers and groundwater, we need to look at 'non-traditional' sources like desalination, water recycling and long-distance transfers.</p> <p>After looking at a number of options to cover for the significant reduction in our abstraction licences on the rivers Test and Itchen, we consider HWTWRP to be the most feasible.</p> <p>We are working closely with the EA, Natural England, Marine Management Organisation (MMO) and other stakeholders and we progress work on HWTWRP.</p>
287.11	<p>Reduce reliance on abstraction in our internationally renowned chalk streams</p> <p>One of the Trust's key priorities is to encourage Southern Water to vastly reduce their reliance on abstraction from our chalk streams, especially the designated River Itchen SAC.</p> <p>In principle, the Trust would not object to a solution, such as wastewater recycling, that would reduce reliance on abstracting water from our chalk streams. However, the implementation of measures designed to address this issue, should not come at the expense of unsustainable downstream environmental impacts.</p> <p>We are concerned that water companies can continue to abstract, including in periods of drought, from our internationally renowned chalk streams such as the River Itchen SAC up until 2040. We urge water companies to accelerate a range of measures to reduce reliance on abstraction from our chalk streams as quickly as possible. However, they must also carefully consider and assess the potential impacts of these proposals on other designed sites including the harbours and the Solent, a legally protected ecosystem which is already under immense pressure due, in part, to the legacy of routinely discharging treated and untreated effluent into our rivers and seas.</p>	<p>Our River Test and River Itchen abstractions continue to operate within agreed licence limits set by the EA in 2019. We expect tighter limits to be applied to the River Test abstraction from 2027, which will further restrict how our Lower Test Surface Water Source will operate. In parallel, we continue to engage the EA, Natural England and other stakeholders around the timetabled renewal of the River Itchen abstraction licences in 2024. In determining the future of these licences, we will be considering the outcomes of our ongoing environmental investigations into the River Itchen wetlands and assessments under the CSMG.</p> <p>We are committed to reducing our reliance on drought permits and orders and will cease all use of these options by 2041 and our revised dWRMP24 include sensitivity testing to understand if we can bring forward these dates and evaluate the optimal 'best value' timeline for doing so.</p> <p>We will continue to deliver our programme of environmental investigations working with the EA and Natural England to provide a robust evidence base that will inform future licencing decisions and deliver environmental improvement. In the longer term, we are committed to achieving the sustainability of all Chalk Streams across our catchments. Under our Environmental Ambition and adaptive planning approach, we are considering a range of potential outcomes where we will significantly reduce abstraction from the Itchen Catchment including complete cessation from the Itchen Catchment by 2050 under the highest Environmental Destination</p>

Reference	Hampshire & Isle of Wight Wildlife Trust feedback	Southern Water response
		<p>scenarios. We are also committed to cease use of our Alresford groundwater source from 2030 following recent environmental investigations under the Habitats Directive. We will also consider additional sensitivity scenarios to our Environmental Ambition in which our current abstractions from the Itchen are reduced as soon as possible but that will allow us to maintain supplies and drought resilience to our customers.</p>
287.12	<p>Impacts to our legally protected harbours in the Solent Currently, we do not consider that Southern Water has assessed the environmental impact of the 'Hampshire Water Transfer and Water Recycling Project' on the designated Solent Marine Sites. In particular, we urge Southern Water to provide more information, including a HRA, on what will be directly discharged into the Solent as a result of this project and the potential impacts on the designated sites.</p> <p>We seek confirmation that the net benefit of the Havant Thicket reservoir on nutrients in the designated harbours will be maintained. We would like to see accurate detail of the potential increase in inputs through the Lavant and Hermitage Stream and also the volumes and composition of the outputs through the long sea outfall.</p> <p>Considering the significant public concern, we urge this information to be provided in time for a robust consultation on the proposals in the summer.</p>	<p>We are currently carrying out surveys which will inform our public consultation on this project. As part of HWTWRP, the net environmental benefits have to be maintained as a minimum and improved where possible.</p>
287.13	<p>Impacts on the ecosystems at Havant Thicket reservoir During the initial proposal and consultation for Havant Thicket reservoir, we were pleased to see the creation of new wildlife habitats integrated into the reservoir design. The wildflower-rich outer slopes would create much-needed pollen and nectar for insects and the wetland is probably the main feature of interest from an ecological point of view within the locale of the reservoir.</p> <p>Furthermore, technical analysis from Natural Capital Solutions suggests that there is a large increase in the ecosystem services benefits that may be derived from the reservoir project worth</p>	<p>With regards to integration of the project with the approved plans for the Havant Thicket Reservoir, Southern Water and Portsmouth Water are working together to ensure that environmental commitments made in respect of the reservoir, particularly around the wetland, are delivered.</p> <p>Further detail on the scheme and the environmental impacts in provided in Annex 6 of this SoR.</p>

Reference	Hampshire & Isle of Wight Wildlife Trust feedback	Southern Water response
	<p>approximately £2,243,667 annually in a normal year, rising to £4,913,467 annually in a drought year.</p> <p>We need to see clear evidence provided by Southern Water that the water recycling proposals for Havant Thicket will not undermine the net gain for wildlife or the ecosystem services provided by the project.</p>	
287.14	<p>Tackle sewage issues and provide robust ecological evidence on impacts to build trust</p> <p>It is of the utmost importance that the proposals for the 'Hampshire Water Transfer and Water Recycling Project' are correctly scrutinised to ensure it doesn't have an adverse impact on the designated sites and provides a sustainable long-term solution to abstraction from our chalk streams. This necessitates additional engagement and scrutiny beyond what has taken place so far.</p> <p>Although out of scope of this plan, we consider that Southern Water's efforts so far haven't been sufficient in tackling water quality and supply issues, considering that the most recent EA water and sewage companies environmental report found Southern Water to be performing significantly below target on security of water supply, the worst performing company in the country. This has ultimately led to an understandable level of scepticism within the local community regarding Southern Water's ability to deliver these wastewater recycling plans without adverse ecological impacts on highly designated sites.</p> <p>The Trust is clear that water recycling could be an essential component of a suite of measures needed to help us reduce reliance on chalk streams, if accompanied by robust ecological analysis. We must urgently see robust evidence that the proposals would not adversely impact any legally protected habitats, including the Chichester and Langstone Harbours SPA, the Solent Maritime SAC, the Solent and Southampton Water SPA and Ramsar and, Portsmouth Harbour SPA and Ramsar.</p>	<p>Under the DCO requirements, the HWTWRP will be carrying out a significant amount of surveys and assessment. Once complete, we will be happy share the results at public consultations.</p> <p>We will continue to liaise with all stakeholders as we progress work on this project.</p>

Reference	Hampshire & Isle of Wight Wildlife Trust feedback	Southern Water response
	<p>We would urge Southern Water to rapidly address some of the shortcomings in the information provided to support this application and to bring forward parallel plans to address issues around sewage and water quality in the Solent, for example by reducing reliance on storm overflows. Without robust and credible plans to address the wider environmental impacts of their operations, Southern Water will struggle to be seen as a trusted deliverer of schemes like this.</p>	

10. Feedback by Havant Climate Alliance and Havant Friends of the Earth and our response

Reference	Havant Climate Alliance and Havant Friends of the Earth feedback	Southern Water response
281.1	<p>Summary We accept the need to make changes to how water is provided in the South East.</p> <p>However we have serious concerns about the water recycling project, proposed in our area i.e. recycling effluent from Budds Farm WWTW, using reverse osmosis which would then be pumped to Havant Thicket Reservoir, with a new 40km pipeline from there to Otterbourne WWTW. A decision about this should be delayed until a later 'decision point' after 2030, when smaller alternative schemes have been fully investigated and if appropriate, implemented. These can be less environmentally damaging and emit less greenhouse gas. Recycling schemes should be seen as a last resort, if other schemes are unable to provide sufficient water.</p>	<p>We have a baseline supply-demand deficit in Hampshire as a result of licence changes in 2019 made to provide additional protection to the River Test and River Itchen. These changes have significantly reduced the amount of water we can take from the rivers, particularly in drought. Under our Section 20 agreement with the EA following those changes to our abstraction licences we need to employ all 'best endeavours' to develop a long term solution to replace and reduce our reliance on drought permits and orders that allow us to abstract outside our normal limits from the sensitive and protected chalk rivers Test and Itchen.</p> <p>The size of the supply-demand deficit in drought is such that even if we implemented alternative schemes earlier, we would still likely need a desalination or water recycling scheme of similar magnitude and prior investigations have already ruled out desalination in the Southampton area. Delaying a decision until 2030 and the consequent additional planning and development time would mean that we would be reliant on these drought permits and orders for longer.</p>
281.2	<p>A. Project to Recycle Effluent from Budds Farm and transfer it to Havant Thicket Reservoir.</p> <ol style="list-style-type: none"> 1. The planning application agreed by Havant Borough Council and East Hampshire District Council, was for the Reservoir to be entirely filled by excess water from Bedhampton Springs, during winter. Being built by Portsmouth Water and funded by Southern Water, it was envisaged to be an adequate supply for transfer to the Southampton area, to avoid over extraction from the Itchen and Test chalk streams. 2. Southern Water's recycling project, was not presented until after the reservoir had planning permission. It will be both environmentally damaging and a huge source of carbon emissions, due to the energy needed for reverse osmosis (even if only 10% of that needed for desalination) and the amount of new infrastructure that needs to be built, with a Waste Processing Plant, 	<ol style="list-style-type: none"> 1. The original 21MI/d transfer to Southern Water from Havant Thicket Reservoir was part of the wider mitigations for abstraction licence reductions in 2019 and included a 75MI/d desalination plan on the West Southampton coast to maintain adequate supply in Hampshire and reduce abstraction pressure on the River Test and River Itchen. Following further investigations, the desalination option was found not to be viable and was replaced by the HWTWRP. 2. Water recycling was included as an alternative to desalination. It produces less carbon, both during construction and operation than desalination. 3. We acknowledge there will be some disruption during the construction phase but we will work with our delivery partners to minimise the impact. 4. The original desalination project was part of our WRMP19 strategy, before any change of ownership. Other smaller schemes were considered; however the size of the supply-demand deficit we face means that the smaller options cannot provide the required volume, even in combination, to maintain our customers level of service and reduce our reliance on drought permits and orders.

Reference	Havant Climate Alliance and Havant Friends of the Earth feedback	Southern Water response
	<p>pumping stations and more than 40 Km of pipeline from the reservoir to Otterbourne. We doubt that the high level of carbon emissions can be mitigated.</p> <ol style="list-style-type: none"> 3. The pipelines required will be hugely disruptive for residents along their route. 4. Such a major infrastructure project will greatly increase water bills for Southern Water customers and may thus increase the profits of the company. With the involvement of Macquarie we are suspect that profit is the main driver for this project, when smaller, more environmentally friendly schemes would generate less income. 5. We understand that water recycling needs to be very carefully managed and monitored to avoid contaminants and pathogens getting into the water supply. We do not trust Southern Water to do this, in view of their poor track record on pollution incidents and lack of compliance with regulations. A member of our group submitted 15 questions to Southern Water after a visit to their pilot recycling plant on 24th January '23 but to date has not received answers. These included questions about risks from commercial/industrial contaminants, and the presence of chemicals in reverse osmosis membranes. That information should have been available before the end of the Consultation. 6. The results of EIA and HRA are not expected until later this year. A public consultation should not be taking place until after those results are known and fully publicised. The public have had little information about alternative schemes. The Recycling Project has been presented as the only reasonable option. 7. This round of public consultation has been inadequate. Very few people knew about it until local groups such as ours started raising concerns. 8. There is concern about how constant topping up with recycled water will affect the wetlands and biodiversity planned for the reservoir. When full, some of the water from the reservoir will also be released into Langstone 	<ol style="list-style-type: none"> 5. We have undertaken a pilot trial using the proposed treatment process at Budds Farm WTW. As part of this trial, extensive sampling was undertaken to measure concentrations of a large suite of contaminants, in the final effluent, and at each stage of the water treatment process. The proposed FAT process is an internationally proven, robust, multi-barrier treatment process capable of removing a broad spectrum of contaminants to produce a highly pure recycled water. Our pilot sampling data has successfully demonstrated the robustness of the process for our specific system. The sampling data from the pilot plant was used as an input to quantitative risk assessment process. Water recycling schemes of this type have been in operation internationally for decades, with the earliest examples dating back to the 1960s. In 2017, California alone had at least 8 large scale indirect water recycling plants in operation, with a further seven in development. The older example of water recycling systems is the Goreangab Water Reclamation Plant in Windhoek, Namibia. It was first commissioned in 1969 and was replaced by a newer, larger facility in 2002. Unlike our proposal, this is a direct water recycling system, with recycled water transferred directly to the water supply works instead of discharging to the environment. No adverse health effects have been attributed to the this recycled water being used for drinking water supply for Windhoek. We have conducted an advanced statistical analysis to quantify the public health risk associated with the proposed water recycling system. This covers both acute health impacts associated with pathogen exposure, and chronic health impacts associated with chemical exposure (e.g., carcinogens). The findings of this analysis show extremely low health risk posed by the recycled water (benchmarked against WHO standards), even in simulated extreme treatment failure scenarios. 6. The consultation on dWRMP24 was based on initial SEA. More specific assessments based on surveys, will be presented as the project progresses. We plan to carry out further consultation at various stages of this project. 7. We have notified and engaged with over 3,000 stakeholders during the consultation. We have also worked with our customer focus groups to understand their views on the project. 8. The reservoir levels will be carefully managed to minimise the impact on any receiving water bodies. 9. Recycled water has lower nitrate levels than the spring water and would meet drinking water standards before entering our supplies. 10. The scheme looks to work with the climate variation, by using the reservoir storage and natural spring water. However, we are now required to plan

Reference	Havant Climate Alliance and Havant Friends of the Earth feedback	Southern Water response
	<p>Harbour via streams. We do not know the effect of this on that nationally designated habitat.</p> <p>9. Portsmouth as well as Southern Water customers will receive recycled water mixed with spring water. We don't know whether this will affect the taste of the water. This and/or the thought of recycled effluent may drive more people to use bottled water for drinking, which will be environmentally damaging.</p> <p>10. We are told that water recycling is a tried and tested technology used around the world. However this is mainly in drought-stricken countries such as California and Namibia. Climate change models show that although we will suffer periods of drought, these will be interspersed with periods of heavy rain with the risk of flooding. Rather than recycling we should be looking at solutions that enable us to harvest and store that water.</p>	<p>more severe droughts (up to 1-in-500 year severity) than in the past. The work we have undertaken shows that the input from the springs will not be sufficient to maintain reservoir levels. In order to maintain supplies, the reservoir will need to be augmented by recycled water.</p> <p>Further details to many of these comments are also provided in Annex 6 of this SoR.</p>
281.3	<p>B. Alternative solutions</p> <p>1. Southern Water say that they are committed to reduce water leaks by half by 2050, which is very little commitment at all. They say they fix great numbers of leaks each year. But a representative informed us that approximately one fifth of water is lost through leaks. This is a large amount, and reducing this loss to a negligible level might help solve current water shortages. Southern Water are also thought to be behind industry good practice in replacing water mains, which contributes to the reduction of leaks. Fixing leaks and replacing water mains is not profitable for the company, but doubling, trebling or quadrupling resources available for this would save a large amount of water each year.</p> <p>2. More flexible abstraction licences can be used so that water can be extracted from rivers and aquifers when levels are high after heavy rain and stored. (However we agree that our chalk streams need protection during droughts, not just the Itchen and the Test but other streams like the Ems, which now runs dry in summer impacting wildlife, whereas it used to run all year). More small reservoirs should be built, closer to the areas</p>	<p>1. Our network consists of 13,870km of water mains, which makes finding and fixing leaks challenging. We fixed 22,000 leaks across our region last year. We are looking to halve leakage by 2050. We have considered a scenario with 62% leakage reduction by 2050. We recently invested an additional £1.2 million to speed up the roll out of a new Advanced Pressure Management system to reduce fatigue of the pipes which can cause bursts. We have fitted 7,000 acoustic loggers to detect and pinpoint leaks; even on deeply buried pipes. Reducing leakage is a key part of our strategy to maintain supplies in the future but it cannot by itself address the shortfall we are facing in Hampshire.</p> <p>2. Abstraction licences are controlled by the EA. ASR needs the aquifer to be 'confined' i.e. where it is one separate underground body of water where the water would remain. We have investigated this option in the past and have one such scheme in the Lower Test but it can only provide about 5.5MI/d water; much less than the HWTWRP. Due to the time required to investigate and assess the feasibility of the option, we do not expect the option to be available before 2037-38. The groundwater is unconfined elsewhere in Hampshire such that the water would simply flow away and its storage at the site where it is pumped cannot be guaranteed. More detail on ASR schemes is presented in Annex 8 of this SoR.</p> <p>3. Rainwater capture and storage for commercial businesses is not controlled by water companies but we do encourage such good practices.</p>

Reference	Havant Climate Alliance and Havant Friends of the Earth feedback	Southern Water response
	<p>where water is needed. Storage via recharge of confined underground aquifers should be explored. Why is the River Test Managed Aquifer scheme not being considered until 2041?</p> <ol style="list-style-type: none"> 3. Farmers and commercial growers can be encouraged to collect and store water for their own use. e.g. at a fruit farm in the Meon valley growers have been able to build themselves an olympic swimming pool size reservoir, filling it with rainwater from the roofs of farm buildings. They had enough water to produce a bumper harvest despite last year's dry summer. 4. There are many practical measures that can be encouraged and implemented to reduce domestic use in future, some of these mentioned by the CEO of Portsmouth Water i.e. universal metering with smart meters, aerating water from taps and showers, smaller baths, and water butts for gardeners. Projects to separate grey water from effluent should be explored. It would not be unreasonable for there to be residential hose pipe bans during droughts. Lower charging rates for abstemious users, and higher rates for unnecessarily heavy users could be tried, as long as those with larger families or medical needs can be protected. 5. We support plans for water transfer between regions, making use of surplus surface water. Although building pipelines will have an environmental and carbon cost, it will be less than needed for reverse osmosis and dealing with toxic brine. Water will only need to be pumped between areas when there is a drought, instead of every day as proposed for the Budds Farm/Havant Thicket recycling scheme. Not all water transfers will need pumping as there will be some gravity flows. Some transfers may use existing waterways over large sections, with biodiversity and recreational benefits. 	<ol style="list-style-type: none"> 4. We carried out our Universal Metering Programme during 2010-15 and increased our domestic meter penetration to 88%, which is among the highest in the UK. We now plan to introduce smart meters, which can transmit data in near real-time in order to allow us to proactively engage with customers about their water use and also to identify and fix leaks more quickly at customer premises. We are aiming to replace all our existing household meters with smart meters by 2030. We have social tariffs in place in order to protect customers with justifiable need for more water from higher bills. 5. Our plan includes importing up to 120Ml/d of water from Thames Water. This supply is expected to be available from 2040.

Reference	Havant Climate Alliance and Havant Friends of the Earth feedback	Southern Water response
281.4	<p>C. Alternative locations for recycling effluent If, despite all other alternative measures being fully assessed and implemented where possible, it remains necessary to create more drinking water, there are alternative locations for a recycling plant. These have advantages over Budds Farm/Havant Thicket Reservoir. Both of the sites mentioned here are in a geographically better position, requiring shorter pipelines, although they would not have access to the same quantity of effluent as Budds Farm. However, less recycled water may be needed if other alternative measures are in place.</p>	<p>We have considered alternative sites and the HWTWRP has major advantages over these (see Annex 6 to this SoR).</p>
281.5	<p>1. The main alternative is Peel Common WWTW near Fareham, which has not been presented as an option. The advantages are:</p> <ul style="list-style-type: none"> a. There is no saline intrusion problem with effluent from Peel Common. b. There would be a shorter pipeline route to Otterbourne, i.e. reduced carbon cost and environmental impact c. Southern Water identified benefits to the water environment in the Solent from recycled water from Peel Common rather than Budds Farm. d. At Peel Common there is room for water processing and storage tanks to provide a buffer. If toxins were to enter they would be better dealt with there than if they entered a large body of water such as Havant Thicket. <p>A scheme using Peel Common effluent could still be expanded at a later date to take Budds Farm effluent if it proved necessary</p> <p>2. Chickenhall WWTW would be geographically ideal, being right beside the Itchen.</p>	<p>1. Use of Peel Common WTW would not provide the volume of water required as its capacity is only about a third of the Budds Farm WTW and it has similar environmental and delivery risks. It would still involve construction of pipelines potentially across the River Itchen SSSI and the Itchen SAC to Otterbourne WSW. There would also be a need for an environmental buffer to ensure dilution and mixing with non-recycled water. This would still either require use of Havant Thicket Reservoir or an alternative new body of water, for example, the River Itchen or a new lake at Otterbourne WSW.</p> <p>2. Water discharged from Chickenhall WTW supports flows in the River Itchen and allows Portsmouth Water to continue to abstract from the Lower Itchen during drought. It is in effect already a 'de-facto' water recycling scheme. Removal of discharge from this location would increase the abstraction impact of both Southern Water and Portsmouth Waters surface water abstractions on the Itchen and would likely require further licence reductions under both companies' Environmental Destinations. The discharge flow rate is also much smaller than Budds Farm WTW and so would not deliver the same supply benefit.</p>
281.6	<p>D. Delayed Decision Point Time is needed to fully evaluate and compare all the alternatives with their relative financial, environmental and carbon costs. The WRSE consultation states that not every decision must be made now and there will be other decision points along the way to 2075. On that basis it would be wise</p>	<p>These issues are discussed in Annex 6 of this SoR.</p>

Reference	Havant Climate Alliance and Havant Friends of the Earth feedback	Southern Water response
	to delay the decision about water recycling until the early 2030s to allow all the alternatives to be fully investigated.	

11. Feedback by Havant Green Party and our response

Reference	Havant Green Party feedback	Southern Water response
297.1	<p>General Comments Havant Green Party (HGP) supports the need to ensure water security in the future, however, we do question the framing of water scarcity in the current solutions presented. The government has changed the drought scenario requirements from 1:200 to 1-in-500 year; this seems an extremely high ‘insurance’ threshold for a very rare occurrence.</p>	<p>We must comply with the WRPG and include this scenario in our strategy. The inclusion of this scenario is based on assessment by the Cabinet Office of the societal and environmental risks of not sufficiently planning for a drought of this severity as set out in the Cabinet Office ‘Keeping the Country Running: Natural Hazards and Infrastructure’ report. Further work was set out in the Defra Water for Life White Paper and 2015 EA advice to Defra on Water Supply and Resilience and Infrastructure. This planning need was reiterated last year by the National Drought Group in response to the comparatively mild Summer 2022 drought.</p> <p>We have undertaken sensitivity testing of the timeline to achieve 1-in-500 year drought resilience to explore the impacts on both strategy and other metrics of alternative timelines.</p>
297.2	<p>Our Objections HGP objects to both the Southern Water (SW) and Water Resources in the South East (WRSE) Regional Plan for the following reasons:</p> <ol style="list-style-type: none"> 1. We are very concerned that a full options appraisal has not been completed. 	<p>We have provided further detail on the options appraisal process for Hampshire in Annex 6 of this SoR.</p> <p>Our revised dWRMP24 includes further detail on the best value options appraisal process we have undertaken with WRSE. The best value assessment process includes evaluation of the various options against a number of planning, environmental, socio-economic and cost criteria, as well as legal and policy obligations and wider strategic objectives. The options appraisal helped better understand the benefits and impacts of the various options.</p>
297.3	<ol style="list-style-type: none"> 2. We are very concerned that targets for leakage reduction and water usage are not strong enough. 	<p>We are aiming to achieve a PCC of 110l/h/d by 2045 under dry year conditions. We also plan to reduce non-household demand by 12% by 2037-38 compared to 2019-20 levels and leakage by 50% by 2050. We have also tested more ambitious PCC (98l/h/d by 2045 under dry year conditions) and leakage reduction (62% by 2050) targets.</p> <p>The success of demand management initiatives depends on behaviour change in relation to water use. Aiming for higher targets carries additional deliverability risk and we need to balance the need to reduce demand with the need to maintain uninterrupted supply in all but the most extreme conditions. We have taken this into account in setting our demand management targets.</p>
297.4	<ol style="list-style-type: none"> 3. We have very serious concerns that a full EIA and HRA has not been undertaken to ascertain the impact of the Budds Farm Effluent Recycling scheme on Havant Thicket Reservoir in Havant. 	<p>A Full EIA is currently being carried out on this option, as part of the DCO process and will be shared as part of the public consultation.</p>

Reference	Havant Green Party feedback	Southern Water response
297.5	4. We are concerned that the promised Havant Thicket Reservoir 'environmentally led' mitigation and compensation scheme can no longer be met.	We will be working with Portsmouth Water to support the promised mitigations and compensation, together with other environmental benefits brought via the proposed scheme
297.6	5. We are very concerned that the lack of public trust in Southern Water's capability to deliver a quality drinking supply will drive residents to buy bottled water because tap water will taste different.	<p>We are working hard to rebuild our reputation and regain the trust of our customers and communities.</p> <p>Just like water across the country has its own distinct taste influenced by the geology of the local area, the water taken from the reservoir may taste different from existing supplies due to the spring water being open to the elements. The taste could also vary if recycled water is added but the water at customers' taps will continue to meet strict drinking water quality standards and be wholesome to drink. We are working with a range of international experts, our regulators and environmental organisations to develop our plans.</p>
297.7	<p>Conclusion</p> <p>As it stands, we believe that more work is required on the alternative options such as aquifer storage, reduced usage and leakage reduction. Solutions such as effluent recycling and desalination must be a last resort and therefore should be delayed until the 2029 WRSE WRMP.</p>	<p>We agree that other options should be considered before desalination or water recycling. However, due to the size of the supply-demand deficit we face after the recent licence changes in Hampshire in addition to Environmental Destination, increased drought resilience and population growth means that these types of schemes are required in addition to more conventional sources of water.</p>

12. Feedback by Historic England and our response

Reference	Historic England feedback	Southern Water response
256.1	<p>1. Headline comments on the dWRMP24</p> <p>A. We support the approach to planning that identifies the 'best value' option We support the approach to planning that identifies the 'best value' option, whereby decisions are made based not on cost alone but with consideration of other factors such as benefits to customers, the environment and society.</p>	<p>The comment is noted.</p>

Reference	Historic England feedback	Southern Water response
256.2	<p><u>B. We are concerned by inadequate reference to the historic environment in the plan</u></p> <p>We observe generally a lack of suitable references to the historic environment in the dWRMP24. In headline terms (i.e. without reference to specific proposals) suitable references might include, but not be limited to:</p> <ul style="list-style-type: none"> <li>i. There is an opportunity for the priorities in the non-technical summary to refer to the historic environment as well as the natural environment. <li>ii. Page 13 of the non-technical summary refers to ‘Protecting the environment in north Sussex’ when that text box focuses on the natural environment. <li>iii. The summary of options considered in the non-technical summary refers broadly to the potential for environmental impacts but does not make clear this includes the historic environment e.g. potential impacts on archaeological remains should be made explicit when referring to the impacts of proposed pipelines. <li>iv. In the full plan, the short sections on environmental protection measures within the areas covered by Southern Water focus solely on the natural environment. <li>v. Currently the text associated the plan’s environmental ambitions centre on WINEP. We recommend that Southern Water also recognises through its WRMP that its environmental considerations extend more widely to encompass the historic environment too. <li>vi. Section 8 on environmental assessments does not adequately acknowledge the need for heritage impact assessment associated with specific proposals and the unknowns associated with the historic environment at this stage, especially those that relate to archaeological remains. The high-level environmental assessment that is summarised in the SEA as published would not in all cases fulfil what is required to demonstrate that the option is potentially acceptable. <p>As a general comment, the Plan should include a few paragraphs summarising why the historic environment is important in the context of water resource planning and management, what steps have been taken so far to consider the historic environment and</p>	<p>The environmental assessments are at a strategic level as are the level of detail available in design of scheme infrastructure. Once the options are selected for delivery, more detailed investigations are carried out and any impacts on sites of historic importance are fully taken into account.</p>

Reference	Historic England feedback	Southern Water response
	<p>how proposals will need to take the historic environment into account going forward.</p> <p>In section 2 of this letter, we summarise our comments on why the historic environment is important in relation to water plans.</p>	

Reference	Historic England feedback	Southern Water response
256.3	<p>C. <u>There is a need for more information on the location of proposed development and more detailed heritage impact assessment of proposed sites</u></p> <p>The dWRMP24 and its supporting documents include little clear information about the precise location of proposals and no detailed maps. This makes it very hard for us to consider and comment on potential impacts on the historic environment. While in some cases, a spatial expression is impractical or currently unknown, we would greatly appreciate more clarity about the location of proposals where they are known, so that we and indeed all parties can consider the potential impacts of proposed development. We offer initial comments on specified proposals in section 3 below and will comment as appropriate as more details are made clear.</p> <p>Supporting the proposed allocations needs to be heritage impact assessment, at a level of detail proportionate to the proposal and local environment. From reviewing Appendix H of the SEA, we note that some assessment has been undertaken and further work has been identified to be needed for some proposals. We underscore the importance of such work before it can be demonstrated that the proposed option is acceptable in accordance with paragraph 1.7.3 of the draft National Policy Statement for Water Resources Infrastructure (2018), which states that: 'Schemes that are included in a final published WRMP will have been assessed to inform suitability and ensure they do not have any unacceptable environmental impacts that cannot be overcome.' Paragraph 2.5.6 in the draft NPS states that 'Any option included in a final WRMP will need to consider feasibility and reliability as well as taking account of potential environmental and social impacts'. We have yet to see evidence that would meet the above requirements relating to the historic environment. We cover this point in more detail in section 3 of our letter.</p>	<p>In order to comply with SEMD, we have to redact actual option names and locations from the published plan. Where detailed designs and mapping are available, we would be happy to share these with Historic England on request.</p>

Reference	Historic England feedback	Southern Water response
256.4	<p>2. Why is the historic environment relevant and why should it be referenced in the dWRMP24</p> <p>The WRMP is of particular interest to Historic England for the following reasons. We advise consideration of these issues to inform an appropriate and positive response to the conservation and enhancement of historic environment within the WRMP.</p> <ol style="list-style-type: none"> 1. The potential impact of water catchment and abstraction measures on heritage assets and their settings, including impacts on water-related or water dependent heritage assets; 2. The potential impact of hydro-morphological adaptations on heritage assets: this can include the modification/removal of historic in-channel structures, such as weirs/coastal and estuarine features and historic sea defences; as well as physical changes to rivers/the coastline with the potential to impact on archaeological and palaeoenvironmental remains; 3. The potential for unrecorded deeply buried and waterlogged archaeology within the 'natural' floodplain/estuarine/coastal deposit sequence; such sites may survive, buried below ground level, in modern wetlands as well as in areas that are no longer wetlands, including urban areas; buried waterlogged archaeological remains and those of relict wetlands are fragile and can be even more vulnerable to changes in groundwater levels than modern wetland habitats; 4. The potential impact of changes in groundwater levels, flows and chemistry on preserved organic and palaeoenvironmental remains; 5. The potential implications of flood risk on securing a sustainable use for heritage assets, including their repair and maintenance; 6. The opportunities for conserving and enhancing heritage assets as part of an integrated approach to flood risk management and river basin and catchment based initiatives, this includes sustaining and enhancing the local character and distinctiveness of historic townscapes and landscapes; and 7. The opportunities for improving access, understanding or enjoyment of the historic environment and heritage assets as part of the design and implementation of water management measures. 	<p>The comments are noted. As we move forward with refinements to scheme design through the planning process, we will follow Best Practice to eliminate or minimise the risk of impact of a scheme on any historical sites and will engage with Historic England to ensure any concerns are addressed.</p>
256.5	<p>3. Impacts of the Plan options on the historic environment</p>	<p>The comments are noted. As exemplified by the engagement with Historic England on HWTWRP, we will continue to liaise with Historic England and</p>

Reference	Historic England feedback	Southern Water response
	<p>The plan outlines a number of projects and proposals for the period to 2050. We set out general comments below in relation to historic environment considerations for evidence, site selection and assessment of impact on significance. We also offer some project and location specific comments on the proposals included in the Plan.</p> <p>Site Selection</p> <p>Any site-specific proposals require an appropriate level of historic environment evidence to inform site selection. Many of the proposals outlined in the Plan will require a degree of site selection. It is important that the historic environment is an early consideration in this process, not an afterthought simply to be mitigated after the selection of a site.</p> <p>To inform site selection generally, we would draw attention to Historic England’s guidance ‘The Historic Environment and Site Allocations in Local Plans’, which has high-level site selection advice which can be of assistance in relation to site selection of all developments. This sets out a suggested approach to assessing sites and their impact on heritage assets, known as heritage impact assessment. It advocates a number of steps (see page 5 of the advice note), including understanding what contribution a site, in its current form, makes to the significance of the heritage assets, and identifying what impact the development might have on their significance.</p> <p>We do not recommend radius-based methodology for assessment. This is because it is important to understand the significance of any heritage assets that may be affected, including consideration of their settings and where they are in the landscape, not specifically within a given distance from the development. This requires a more holistic process, informed by heritage expertise, which seeks to understand the contribution that setting makes to the significance of an asset. We recommend also referring to our advice notes on managing significance in decision taking and the setting of heritage assets.</p> <p>We are already involved in discussions relating to some of the proposals, such as the Hampshire Water Transfer & Water</p>	<p>all other stakeholders as we progress the selected options to delivery stage.</p>

Reference	Historic England feedback	Southern Water response
	<p>Recycling Project (HWTWRP – see below) and the proposed reservoir near Abingdon, a key source for the Thames to Southern Transfer (T2ST). However, generally we are concerned by the extent of heritage impact assessment work undertaken for many of these proposals. It is important that a degree of heritage impact assessment is undertaken at plan-making stage, in line with the advice in our site allocations advice note referenced above. Please ensure that there is sufficient heritage impact assessment and an appropriate evidence base to inform the site selections including the selection of broad locations.</p> <p>Historic England has also produced a technical advice note relation to Lakes and Water Features Historic England which you may also find useful.</p>	
256.6	<p>Project and location specific comments on proposals in Plan</p> <p>We note that some of the measures in the dWRMP are unlikely to impact on the historic environment, such as helping customers to reduce their water use. In this letter we focus on the areas of activity where the historic environment is a key consideration, based on the information available, and the need for further evidence to ensure that potential impacts inform the choices made.</p> <p>We have made our best efforts to identify proposals where their location is known, either specifically or more broadly. However, we can only comment where there is clear information available. Consequently, we request further engagement as the different proposals are progressed. We arrange our comments broadly under the headings used in section 6.3.1 of the dWRMP.</p>	<p>The comments are noted. As mentioned above, we will liaise with Historic England and other stakeholders as we progress our options to the delivery stage.</p>

Reference	Historic England feedback	Southern Water response
256.7	<p><u>Pipelines and transfers</u> Clearly it is impossible for us to comment on potential impacts on the historic environment without clarity on the proposed route corridor of each pipeline. In general terms, our primary focus regarding new pipelines (assuming they are underground) centres on direct physical impacts on heritage assets, in particular on archaeological remains, rather than temporary setting impacts during construction (which may of course require mitigation, but which by definition will not be permanent).</p> <p>We welcome work on detailed routing of the pipeline to avoid impacts on the historic environment, implementation of construction best practice and designing aboveground infrastructure to be in keeping with the local historic environment.</p> <p>Having reviewed Appendix H of the SEA, there are numerous proposals which state that best practice measures will 'likely' be implemented and those which state that an archaeological watching brief 'may' be needed.</p> <p>Furthermore, there are several options which state that further work is 'likely to be required' to determine significance of effect, depending on the presence or absence of buried archaeological remains. There is at least one where reference is made to 'avoid heritage assets, where possible'.</p> <p>When taken as a whole it is clear that while heritage-related assessments are underway, more work is needed to demonstrate that the proposals will not generate any unacceptable impacts. Heritage impact assessment, scaled proportionately to the proposal, is needed to inform the route of any new pipelines, including relevant liaison with local authority historic environment services, taking into the designated and non-designated heritage assets and the potential for unknown archaeological remains. To date we have not seen evidence that sufficient assessment has been done and we ask for sight of relevant assessments and the opportunity to comment.</p> <p>Additionally, we flag that an archaeological watching brief is only appropriate where one can be confident about the significance of</p>	<p>The comments are noted. We have provided further information on the specific points raised below.</p>

Reference	Historic England feedback	Southern Water response
	<p>the remains that may be encountered. It is less helpful when there is a lack of information available on the local area.</p> <p>Some proposals refer to residual effects due to potential loss of archaeological remains. We emphasise that impacts on buried archaeological remains are permanent and irreversible (in contrast with temporary impacts on setting of other assets). To establish if potential impacts are acceptable requires input from a heritage professional, with reference to impact on heritage significance.</p> <p>Any works that would pass through scheduled areas would, under the 1979 Ancient Monuments and Archaeological Areas Act, require scheduled monument consent (SMC) and we would not usually recommend to DCMS that this be granted. Any pipeline routes or other infrastructure should be routed outside scheduled monument boundaries; typically we would recommend a buffer of at least 10 metres, subject to the results of further archaeological investigation.</p>	

Reference	Historic England feedback	Southern Water response
256.8	<p><u>Desalination</u></p> <p>If we understand correctly, 4 potential desalination plants are being considered. Desalination plants can vary enormously. Currently, it is unclear about the nature and scale of these proposals. It is important for us to be able to understand what exactly is being proposed to help inform our response.</p> <p>A number of the proposals refer state that an archaeological watching brief may be required. As stated above, an archaeological watching brief is only appropriate where one can be confident about the significance of the remains that may be encountered.</p> <p>In terms of broad locations, we offer the following comments:</p>	<p>Our dWRMP24 included a number of desalination options, mainly in our Eastern area. The desalination option on the Sussex Coast has been removed.</p> <p>A high level assessments of the desalination options has been done at this stage. The locations will be finalised once we move these options to the delivery phase. More detailed assessments on the proposed sites will be done at that stage. We will engage with Historic England and other stakeholders as designs mature.</p>
256.9	<p><i>On the Sussex coast</i></p> <p>We understand a site in Shoreham Harbour was proposed for a coastal desalination plant that could supply the Central Area WRZs. Appendix H of the SEA seems to suggest that the plant would be located within the conservation area, but it does not mention nearby listed buildings, nor the Scheduled Monument (The Marlipins). Appendix H notes in terms of mitigation that 'Archaeological watching brief may be required'. We believe that this preferred site has since been shown not to be deliverable (page 41 and of the dWRMP) so we will not comment any further on this location.</p> <p>If the intention instead is to develop a desalination plant near to Littlehampton, adjacent to the River Adur and the Little waste water treatment works, we note that Appendix H states: 'There are several listed building within 500m of proposed pipeline and two conservation area within 2km. Excavation will be required during construction, there may be impacts on archaeological artifacts' and as mitigation 'Best practice construction methods to minimise impacts on the setting of historic assets. Archaeological watching brief may be required.' This summary assessment does not mention the pair of Scheduled Monuments – earthworks connected with St Mary's Church – nor the fact that St Mary's Church is listed Grade I. More detailed heritage impact assessment is likely to be required for development in this location.</p>	<p>This scheme has now been removed from our revised dWRM24.</p>

Reference	Historic England feedback	Southern Water response
256.10	<p><i>East Thanet Coast</i></p> <p>From Appendix H we note that further work is ‘likely to be required to determine significance of effect, depending on the presence or absence of buried archaeology’ for this proposed option and that ‘Residual effects may remain due to potential loss of archaeological remains due to construction.’ As stated above regarding pipelines and transfers, to establish whether potential impacts are acceptable requires input from a heritage professional. In addition to concerns about unknown archaeological remains, we note there are 27 conservation areas in Thanet, numerous Listed Buildings and Scheduled Monuments, including Reculver Roman Fort and Settlement close to the potential site of the plant.</p>	<p>This option was selected in 2046 in dWRMP24. Consequently, the design, including pipeline routes and any other construction works, are at a very early stage and have not been finalised.</p> <p>As we move forward with detailed design of the project, we will continue to engage with Historic England and will undertake desktop studies and, as necessary, field and ground investigations which could include archaeological surveys, to identify areas of historical and archaeological interest, including the 27 conservation areas, listed buildings and scheduled monuments notified. Any pipeline routes and infrastructure will be adjusted to avoid them. If this is not possible, appropriate further assessment, investigation and mitigation will be carried out.</p>
256.11	<p><i>Thames Estuary</i></p> <p>We understand this would be adjacent to Britannia Refined Metal on the Swanscombe Peninsula. If this understanding is correct, we highlight that this area includes Swanscombe conservation area and numerous listed buildings to the west and is the site of internationally important archaeological finds: viz. ‘Swanscombe Man’ skull, animal remains (e.g. elephant tusk), and 40,000 year old flint tools.</p> <p>This is another example of a proposal where wording linked with proposed mitigation is uncertain and unclear, indicating that more evidence is needed to inform the approach. Proposed mitigations currently state that best practice mitigation measures ‘will likely be implemented’ and ‘an archaeological watching brief may be required’.</p>	<p>This option was selected in 2040 in dWRMP24. Consequently, the design, including pipeline routes and any other construction works, are at a very early stage and have not been finalised.</p> <p>As we move forward with detailed design of the project, we will continue to engage with Historic England and will undertake desktop studies and, as necessary, field and ground investigations which could include archaeological surveys to identify areas of historical and archaeological interest, including the 27 conservation areas, listed buildings and scheduled monuments notified. Any pipeline routes and infrastructure will be adjusted to avoid them. If this is not possible, appropriate further assessment, investigation and mitigation will be carried out.</p>

Reference	Historic England feedback	Southern Water response
256.12	<p><i>Isle of Sheppey</i></p> <p>Our understanding is that the proposed location is likely to be land south of Sheerness Docks, currently used for storage of car imports, though we're unclear of precise site details. Treated water would then be pumped to Southdown Water Service Reservoir (WSR) and Kins Borough WSR on the island for distribution to customers. As an initial comment, we note Sheerness has an exceptional collection of designated heritage assets that includes a conservation area, numerous listed buildings, including some in the highest grades of I and II*, and two Scheduled Monuments (Sheerness Docks and the Queensborough Lines).</p> <p>As above, the wording associated with proposed mitigation is currently uncertain and unclear, indicating that more evidence is needed to inform the approach taken. Proposed mitigations currently state that best practice mitigation measures 'likely' be implemented to minimise setting effects during construction and that an 'Archaeology Watching Brief may be required during the construction phase.'</p>	<p>This option was selected in 2049 in dWRMP24. Consequently, the design, including pipeline routes and any other construction works, are at a very early stage and have not been finalised.</p> <p>As we move forward with detailed design of the project, we will continue to engage with Historic England and will undertake desktop studies and, as necessary, field and ground investigations which could include archaeological surveys to identify areas of historical and archaeological interest, including the 27 conservation areas, listed buildings and scheduled monuments notified. Any pipeline routes and infrastructure will be adjusted to avoid them. If this is not possible, appropriate further assessment, investigation and mitigation will be carried out.</p>
256.13	<p><u>Water recycling</u></p> <p>In common with our comments above, we emphasise the importance of further work to identify potential impacts and proposed mitigation measures with more certainty and clarity. There are numerous proposals which state that best practice measures will 'likely' be implemented and proposals which state that an archaeological watching brief 'may' be needed. There are several proposals which state that further work is 'likely to be required' to determine significance of effect, depending on the presence or absence of buried archaeological remains. As stated above, when taken as a whole it is clear that while heritage-related assessments are underway, more work is needed to demonstrate that the proposals will not generate any unacceptable impacts. We ask for sight of more detailed assessments and the opportunity to comment.</p>	<p>The comment is noted. As mentioned above, we will engage with Historic England and other stakeholders and we progress the selected options to the delivery phase.</p>

Reference	Historic England feedback	Southern Water response
256.14	<p><i>Hampshire Water Transfer & Water Recycling Project (HWTWRP)</i> We note this is a strategic resource option comprised of two main parts: a WRP making use of storage in Portsmouth Water’s Havant Thicket reservoir and a transfer pipeline from the reservoir to Otterbourne WSW, being progressed in collaboration with Portsmouth Water.</p> <p>We welcome the engagement already undertaken on this project – most recently including our advice letter dated 22 July 2022, in which we set out our expectations to see a detailed assessment of the impact on the proposals (including setting) to be provided for comment. Without more detailed assessments, we are unable to offer any more detailed advice at this time; however, we re-iterate that early consideration of potential impacts on the historic environment (both designated and non-designated heritage assets and their settings) is needed, and we look forward to receiving the relevant assessment(s) for comment in due course.</p>	<p>As we finalise our plans for this option, further consultations are planned, including through the DCO planning process. We would be happy to share our plans with Historic England as we refine them.</p>
256.15	<p><i>Sandown - the transfer of treated effluent from Sandown WwTW (currently discharged to sea), to support flows in the Eastern River Yar upstream of the Sandown WSW abstraction at Alverstone. Treated water in excess of the local demand will be transferred through a new transfer pipeline to the Alvington High Level WSR, near Newport, for supply to much of the island.</i></p> <p>While we are uncertain about the precise details or proposed pipeline corridor, reference is made to the pipeline being adjacent to/partly intersecting Clatterford Roman Villa scheduled monument. Appendix H of the SEA states that mitigation measures will include rerouting the pipeline or use directional drilling to ‘minimise’ effects on the SM and that an archaeological watching brief ‘may’ be required. Such measures do not provide adequate reassurance that the proposal will conserve and enhance the historic environment in line with national policy.</p> <p>Any works that would pass through scheduled areas would, under the 1979 Ancient Monuments and Archaeological Areas Act, require scheduled monument consent (SMC) and we would not usually recommend to DCMS that this be granted. We would not usually support directional drilling on a SM. Any pipeline routes or other infrastructure should be routed outside SM boundaries and we would typically recommend a buffer of at least 10 metres,</p>	<p>We recognise the risks highlighted by Historic England and specific routing is being looked at for this scheme, taking into account the environmental and historic setting. We will continue to engage with Historic England through the planning process and are intending to hold a specific further public consultation on this scheme.</p>

Reference	Historic England feedback	Southern Water response
	<p>subject to the results of further archaeological investigation. We note also that setting is an important consideration, particularly where there would be aboveground infrastructure is proposed.</p>	
256.16	<p><i>Woolston - additional treatment to the effluent at Woolston WwTW and sending this to Otterbourne WSW (circa 7.5MI/d), from where it is sent to discharge to the River Itchen upstream of the abstraction for Portsmouth Water source. The scheme also involves discharge pipe from Otterbourne WSW to the River Itchen.</i></p> <p>We note that significant works at Woolston WwTW have already been undertaken. As Southern Water will be aware, in most immediate proximity, there is a conservation area and listed building to the east; and development may also be visible from across the River Itchen to the west. As above, the wording associated with proposed mitigation for this option is uncertain and unclear, indicating that more evidence is needed. Proposed mitigations currently state that best practice mitigation measures 'likely' be implemented and that further work is 'likely' to be required to determine significance of effect, depending on the presence of absence of buried archaeological remains.</p>	<p>This scheme has now been removed from our revised dWRMP24.</p>
256.17	<p><i>Tunbridge Wells – an effluent pipeline from Tunbridge Wells WTW to Bewl reservoir, which feeds Darwell reservoir, Bewl WSW and near Rochester WSW. Additional tertiary treatment required at Tunbridge Wells WTW, which may require land purchase.</i></p> <p>We note proposed mitigation measures include 'consider re-routing of pipeline to avoid listed building or utilise directional drilling if required. Best practice methods to minimise the effects on the setting of the historic assets. An Archaeology Watching Brief may be required during the construction phase. Further work likely to be required to determine significance of effect, depending on the presence or absence of buried archaeology. Residual effects may remain due to potential loss of archaeological remains due to construction.' In common with our concerns above, the wording associated with proposed mitigation is uncertain and unclear, indicating that more evidence is needed to inform the approach.</p>	<p>This scheme was not selected in dWRMP24 until 2046. Consequently, the design, including pipeline routes and any other construction works, are at a very early stage and have not been finalised.</p> <p>As we move forward with detailed design of the project, we will engage with Historic England and undertake desktop studies and, as necessary, field and ground investigations which could include archaeological surveys to identify areas of historical and archaeological interest. Any pipeline routes will be adjusted to avoid them. If this is not possible, appropriate further assessment, mitigation and investigation will be implemented.</p>

Reference	Historic England feedback	Southern Water response
256.18	<p><i>Littlehampton - the transfer of treated effluent from Ford WwTW to a new discharge point to the western River Rother upstream of the Pulborough WSW abstraction.</i></p> <p>While details of the scheme are unclear, we highlight that there are numerous Listed Buildings and a conservation area within Littlehampton, and Scheduled Monuments to the west of the town. Any transfers to the Pulborough area need to take account of the historic environment close to the river Arun.</p> <p>Appendix H states: 'Pipeline routing should be considered to avoid crossing Scheduled Monuments. Best practice measures will likely be implemented to minimise setting effects during construction. Further work likely to be required to determine significance of effect, depending on the presence or absence of buried archaeology. Residual effects may remain due to potential loss of archaeological remains due to construction.' As above, the wording associated with proposed mitigation is uncertain and unclear, indicating that more evidence is needed.</p>	<p>The comments are noted. The recycling plant project, including the precise alignment of pipelines, is still being finalised and is subject to change as the project development and assessments progress.</p> <p>Desktop studies are to be undertaken to identify areas of archaeological interest and the pipeline routes will, if possible, be adjusted to avoid them. If this is not possible, appropriate further assessment and investigation will be implemented. We will engage with Historic England and other stakeholders as designs mature.</p>
256.19	<p><i>Horsham - a new 9.5Ml/d water recycling plant near Horsham WwTW and transfer of the treated effluent to Church Farm Reservoir, which feeds into Pulborough WSW.</i></p> <p>We note also reference to a scheme that would recycle water near Horsham and transfer it through a new pipeline to an existing reservoir near Pulborough. Please once again refer to our headline comments above regarding new pipelines. As above, the wording associated with proposed mitigation is uncertain and unclear, indicating that more evidence is needed to inform the approach. Appendix H states: 'Best practice measures to be implemented to minimise setting effects during construction. Further work likely to be required to determine significance of effect, depending on the presence or absence of buried archaeology. Residual effects may remain due to potential loss of archaeological remains due to construction.'</p>	<p>This scheme was not selected in dWRMP24 until 2055. Consequently, the design, including pipeline routes and any other construction works, are at a very early stage and have not been finalised.</p> <p>As we move forward with detailed design of the project, we will engage with Historic England and undertake desktop studies and, as necessary, field and ground investigations which could include archaeological surveys to identify areas of historical and archaeological interest. Any pipeline routes will be adjusted to avoid them. If this is not possible, appropriate further assessment, mitigation and investigation will be implemented.</p>

Reference	Historic England feedback	Southern Water response
256.20	<p><i>River Medway</i></p> <p>We note plans to develop a water recycling scheme on the River Medway, releasing it into a storage reservoir near Southern Water's Rochester supply works. Without more detailed information on the location of this scheme, we cannot comment on any potential impacts on the historic environment. As above, the wording associated with proposed mitigation is uncertain and unclear, indicating that more evidence is needed to inform the approach. Appendix H states: 'Re-route the pipeline or utilise directional drilling to avoid direct impacts on the scheduled monument. Best practice mitigation measures to be implemented to minimise setting effects during construction. Given there is potential to impact buried archaeology, an Archaeology Watching Brief may be required during the construction phase. Further work may be required to determine the significance of the effect depending on the presence/absence of buried archaeology. Residual effects may remain due to potential loss of archaeological remains due to construction.'</p>	<p>The comments are noted. The development of the project is still at an early stage and pipeline routes have not yet been confirmed. Desktop studies are to be undertaken to identify areas of archaeological interest and the pipeline routes will, if possible, be adjusted to avoid them. If this is not possible, appropriate further assessment and investigation will be implemented.</p>
256.21	<p><i>Hastings</i></p> <p>We note reference to a water recycling scheme near Hastings, used to supplement Darwell reservoir. Without further information, we cannot comment in detail, except to flag the town includes numerous Listed Buildings, conservation areas, 3 Scheduled Monuments and a Registered Park & Garden, Alexandra Park (GII*). As above, the wording associated with proposed mitigation is uncertain and unclear, indicating that more evidence is needed to inform the approach. Appendix H states: 'Best practice measures to be implemented to minimise setting effects during construction. Further work likely to be required to determine significance of effect, depending on the presence or absence of buried archaeology. Residual effects may remain due to potential loss of archaeological remains due to construction.'</p>	<p>This scheme was not selected in our dWRMP24 until 2055. Consequently, the design, including pipeline routes and any other construction works, are at a very early stage and have not been finalised.</p> <p>As we move forward with detailed design of the project, we will engage with Historic England and undertake desktop studies and, as necessary, field and ground investigations which could include archaeological surveys to identify areas of historical and archaeological interest. Any pipeline routes will be adjusted to avoid them. If this is not possible, appropriate further assessment, mitigation and investigation will be implemented.</p>

Reference	Historic England feedback	Southern Water response
256.22	<p><i>Other</i></p> <p>We note plans to work with a large industrial water user to provide them with recycled wastewater and enable Southern Water to use their existing groundwater sources. Assuming this relates to Sittingbourne Industrial Water Reuse, the wording associated with proposed mitigation is uncertain and unclear, indicating that more evidence is needed to inform the approach. Appendix H states: ‘Best practice measures will likely be implemented to minimise setting effects during construction. Further work likely to be required to determine significance of effect, depending on the presence or absence of buried archaeology. Residual effects may remain due to potential loss of archaeological remains due to construction.’</p>	<p>We need to undertake further discussion with the industrial user on the detailed development and design requirements of this scheme. As we move forward with detailed design of the project, we will engage with Historic England and will undertake desktop studies and, as necessary field and ground investigations which could include archaeological surveys to identify areas of historical and archaeological interest and minimise impacts. If this is not possible appropriate further assessment and investigation will be implemented.</p>
256.23	<p><u>Reservoirs</u></p> <p>We recognise the importance of Havant Thicket Reservoir (also for Portsmouth Water’s WRMP), for which planning permission has been granted. We did not object to the proposal for the reservoir; but we did include recommendations that would help to mitigate the identified harm and highlighted opportunities for enhancement to the historic environment. We look forward to the realisation of those opportunities.</p> <p>We note the dWRMP refers to plans for a new reservoir after 2035 close to the village of Blackstone, near Henfield in West Sussex. This is also known as the River Adur Offline Reservoir. Regarding mitigation, Appendix H states: ‘Best practice measures will likely be implemented to minimise setting effects during construction. Archaeological Watching Brief may be required during the construction phase.</p> <p>Further work likely to be required to determine significance of effect, depending on the presence or absence of buried archaeology. Residual effects may remain due to potential loss of archaeological remains due to construction.’ Also, we note plans to increase the size of Bewl Water reservoir. Appendix H states:</p> <p>‘Best practice measures will likely be implemented to minimise setting effects during construction. Further work likely to be required to determine significance of effect, depending on the presence or absence of buried archaeology. Residual effects may</p>	<p>We recognise that further work needs to be done on this option and have therefore increased the lead time for this reservoir to at least ten years.</p> <p>The option to raise Bewl reservoir is not selection until the 2040s. As the schemes are refined through detailed design, we will undertake desk and field based investigations to identify, understand and mitigate any potential impacts on historical sites, including archaeological sites and scheduled monuments. We will continue to engage with Historic England through the planning process as these schemes to eliminate or minimise impacts and implement any necessary mitigation.</p>

Reference	Historic England feedback	Southern Water response
	<p>remain due to potential loss of archaeological remains due to construction.' In common with our comments above, we emphasise the importance of further work to identify potential impacts and associated mitigation measures with more certainty and clarity. Reference is made to best practice measures 'likely' being implemented and further work 'likely to be required' to determine significance of effect, and that an archaeological watching brief may be needed.</p> <p>When considered in combination, it is clear that this is work that is underway, but that further work is needed to complete heritage impact assessment to demonstrate that impacts are going to be acceptable.</p>	

Reference	Historic England feedback	Southern Water response
256.24	<p><u>Borehole rehabilitation, demand interventions, supply interventions and licence variations, and asset enhancement</u></p> <p>At this stage, regarding the above matters, we focus principally on proposals for groundwater abstraction. Various references are made in the dWRMP to groundwater sources, including (but not necessarily limited to):</p> <ul style="list-style-type: none"> • developing groundwater sources near Newbury, Romsey and Newchurch; • progressing plans to recommission two groundwater sources in north Sussex; • applying for a drought permit on a groundwater source near Worthing to continue abstracting water during dry weather; • applying for a drought permit/order on the River Medway to continue abstracting water during dry weather; • applying for a drought permit on a groundwater source near Arundel to continue abstracting during dry weather; and • improving an existing groundwater source near Gravesend. <p>As a general comment, if any of the above proposals are likely to impact on groundwater levels, this could have a significant impact on archaeological remains.</p> <p>Such impacts need to be carefully considered, assessed and monitored.</p> <p>Taking the Isle of Wight source as an example, we note from Appendix H proposed mitigation measures include: 'Best practice mitigation measures to be implemented to minimise setting effects during construction. Given there is potential to impact buried archaeology, an Archaeology Watching Brief may be required during the construction phase. Further work may be required to determine the significance of the effect depending on the presence/absence of buried archaeology. Residual effects may remain due to potential loss of archaeological remains due to construction.' We note a similar approach is taken for other proposals. We are concerned by the uncertainty that a watching brief may be required, and that further work may be required. This needs to be established with more certainty. As stated above, an archaeological watching brief is only appropriate where one can be</p>	<p>The majority of our groundwater options involve refurbishing existing assets to operate within the currently licenced volumes. We are not planning to increase the volume we abstract from these boreholes.</p> <p>Even in cases where we are proposing to relocate boreholes, they will still operate within our current licences.</p> <p>We will be happy to engage with Historic England as we progress these options to the delivery stage.</p>

Reference	Historic England feedback	Southern Water response
	<p>confident about the significance of the remains that may be encountered.</p> <p>We note reference is made to a new borehole at Petworth, and that this is likely to generate significant negative effects associated with landscape during construction. However, we note that Appendix H of the SEA states that 'There are listed buildings and scheduled monuments within 800m. However, the option is unlikely to have effect on the historic environment.' As a general comment, we note Petworth is a sensitive location in several respects, including its conservation area with many listed buildings and adjacent to Petworth House Registered Park & Garden (GI). As a result, we seek more information about the proposal and its assessment.</p> <p>Regarding Candover Drought Permit/Order (2027-2029 only) we note Appendix H states: 'Re-route the pipeline to avoid direct effects on the registered park and garden. Best practice mitigation measures to be implemented to minimise setting effects during construction. Screening could be implemented to minimise any setting impact of plant. Given there is potential for the pipeline to impact buried archaeology, an Archaeology Watching Brief may be required during the construction phase. Further work may be required to determine the significance of the effect depending on the presence/absence of buried archaeology.' As above, the wording associated with proposed mitigation is uncertain and unclear, indicating that more evidence is needed to inform the approach.</p> <p>We have the same message regarding the Managed Aquifer Recharge (MAR), noting the wording associated with proposed mitigation is uncertain and unclear, indicating that more evidence is needed to inform the approach. Appendix H states: 'Given there is potential to impact buried archaeology, an Archaeology Watching Brief may be required during the construction phase. Further work may be required to determine the significance of the effect depending on the presence/absence of buried archaeology.'</p>	

Reference	Historic England feedback	Southern Water response
256.25	<p>4. Comments on the Strategic Environmental Assessment (SEA)</p> <p>A. When considering the objectives of the dWRMP24, the fact that it is uncertain (p63) what the impact will be on the historic environment from delivering ‘a secure and wholesome supply of water’ suggests a lack of sufficient evidence.</p> <p>B. The SEA objectives include ‘Conserve, protect and enhance the historic environment, including archaeology’. Note archaeology is the study of archaeological remains, rather than the remains themselves. As a result, we recommend minor amendment to: ‘Conserve, protect and enhance the historic environment, including archaeological remains archaeology’.</p> <p>C. Section 8.2.7 focuses on the mitigation of effects on Cultural Heritage and Landscape. We advise more detailed consideration of archaeological remains, known and not yet known, with the aim not only linked with the dissemination of results but also – in line with national planning policy – the avoidance of harm and mitigation of unavoidable harm, as appropriate.</p> <p>D. We recommend further work on the proposed monitoring indicators for cultural heritage, informed by liaison with relevant heritage professionals. The indicator associated with the condition of buried archaeological remains would benefit from minor wording changes. The reference to consultation, though welcome, does not provide a focused indicator to monitor, nor do the datasets maintained by Historic England. Clarity is needed in the indicators that Southern Water intend to use.</p> <p>E. Table D14 – we advise stating the names of the World Heritage Sites within the study area. Also, we suggest making clear that conservation areas are designated heritage assets; though designated locally, they are afforded the same level of protection as other designated heritage assets in national planning policy.</p> <p>As Southern Water will be aware, the formatting of this appendix has gone astray and so the maps are not readable, exemplified by Figure D10.</p>	<p>The revised SEA Environmental Report of the revised dWRMP24 will be reviewed to reflect any necessary changes. Please note however, that the conclusions of uncertainty may be valid, given the long term nature of the plan, and that in some instances the assessment will reflect the uncertainty associated with unknown underground archaeological remains. The SEA provides a strategic level assessment, proportionate to the information available. Whilst the request for further specificity is noted, this has been balanced with the stage of the WRMP24 within the infrastructure planning process. The preferred options for managing water supply and demand contained in it will need to be implemented through specific projects. As part of this process, each project may be subject to further assessment to understand and manage its potential environmental and social impacts. These assessments, which may include HRA and EIA, will take account of the issues discussed in this Environmental Report but will also be informed by the greater detail available about construction techniques, building materials, agreed locations and routes as the work progresses.</p>

Reference	Historic England feedback	Southern Water response
	<p>F. Given the figure quoted is from 2020, it would be inaccurate to state that 'currently' there are 1120 designated assets on the HAR register. It would be better simply to state the year for the data.</p>	
256.26	<p>To avoid any doubt, this does not reflect our obligation to provide further advice on or, potentially, object to specific proposals which may subsequently arise as a result of the proposed WRMP, where we consider these would have an adverse effect on the historic environment.</p>	<p>Our delivery teams will continue to consult with Historic England through the planning process as we deliver our strategy.</p>

13. Feedback by the Isle of Wight Council and our response

Reference	Isle of Wight Council feedback	Southern Water response
272.1	<p>The Isle of Wight Council (IWC) have the following comments to make in relation to Southern Water’s consultation on their Draft Water Resources Management Plan.</p> <p>Has Southern Water considered who is the intended audience for the main document? While it is appreciated that the Draft Water Resources Management Plan 2024 has the subtitle of ‘Technical Report’, for the main consultation document this contains a lot of detailed technical information that is difficult to understand and would be better placed in a technical annex. Either that or perhaps use the non-technical summary document as the basis of a main consultation document with which to engage with as wide an audience as possible?</p>	<p>We produced a short non-technical summary with key features of our plan to make it easier for our customer and stakeholders to understand our plan.</p> <p>We are required by regulatory guidance to provide details of the data and methods used for developing various components of the plan. These are by their nature highly technical. In addition to the technical reports and annexes, we are also required to provide information in Water Resources Planning tables. The tables are designed by the EA and, among other things, show when an option is selected, its utilisation in each year of the planning period and the associated costs.</p>
272.2	<p>There appears to be no reference in the technical report to either Sustainable Drainage Systems (SuDS) or sustainable drainage. The lack of any reference to SuDS is disappointing given the accepted holistic approach to the complete water cycle and efficiencies such an approach can provide. The IWC is currently working closely and positively with Southern Water as part of the Storm Overflow Task Force on the island, one of 5 pathfinder projects across the country, and SuDS are likely to be a key component in many areas on the island of helping to reduce Combined Sewer Overflow (CSO) discharges and ‘slowing the flow’ of surface water into the combined sewer system. Government have also commenced a review of the case for implementing Schedule 3 to the Flood and Water Management Act 2010 concerning SuDS. The review will ensure that the commencement of Schedule 3 in England will support the objectives of alleviating pressures on the sewer network and reducing flood risk, as well as improving water quality, amenity, biodiversity, and rainwater harvesting. If implemented, this Schedule would introduce standards for new sustainable drainage systems as well as making connection to public sewers conditional of approval that the drainage system meets the national standards.</p>	<p>Our WRMP is being developed in parallel with our Drainage and Wastewater Management Plan (DWMP). We recognised the benefits that SuDS can provide, particularly in slowing flood flows and providing some potential for water quality and will be considering these solutions through our DWMP strategy and the pilot projects we are implementing on the Isle of Wight.</p> <p>The direct water resource benefits, particularly in providing drought resilience, are less clear unless coupled with MAR schemes. The nature of the geological and aquifer settings and the correspondence of our abstractions with urban areas mean that opportunities are relatively limited and there are no specific SuDS schemes in our WRMP. We will continue to consider full water cycle based approaches in parallel through our dWRMP24 and our Catchment First programme particularly when considering river enhancement measures or other nature based solutions to protect water quality or mitigate abstraction impacts.</p>

Reference	Isle of Wight Council feedback	Southern Water response
272.3	Should schedule 3 be implemented it will have a significant effect on the future management of surface water that provides significant opportunities in terms of supplementing local water supplies. Again a lack of reference to the review and development of national policy with regards to the management of water highlights a lack of strategic thought in approach to water as a resource, with a current focus on drainage/wastewater to get rid of water as quickly as possible and then the requirement for both restrictive measures and significant capital investment to combat increasing drought conditions in meeting demand/supply. The strategic approach needs to adapt to be more aligned to the nature (including availability, weather, climate and the natural environment) than the current planned for approach. The current adaptive planning approach is still too reactionary, it simply provides a range of different actions dependent upon the outcomes of different scenarios.	Integrated catchment management and the consideration of the full life cycle of water as a resource has been part of our wider planning for several years. Our 2017 Water Futures Initiative introduced our integrated water cycle management strategy and the concept of resource hubs that would include the sustainable treatment and recycling of water and wastewater. The implementation of this is demonstrated through the water recycling schemes included in our WRMP24 strategy. In parallel, we have considered wider catchment management for both water quality and resources through our Catchment First Programme and the development of our DWMP which is aligned to our WRMP.
272.4	While Southern Water's DWMP is considering long-term management of the wastewater network, recognising that water that is currently released out to sea is a valuable resource which could instead be recycled back into our catchments and used again to provide additional drinking water supplies, we think more could be done to consider the whole life potential of water as a resource, rather than what currently appears to be an issue to be addressed, whether that be one of getting rid of excess wastewater as quickly and efficiently as possible, or security of supply of water fit for consumption. We appreciate both (DWMP, WRMP) plans are under development, but we feel this provides the opportunity for greater integration, innovation and a more holistic approach that benefits both consumers and the environment.	We recognise the potential for wastewater as a resources. Our dWRMP24 strategy includes a number of water recycling schemes, notably the Sandown recycling option and the HWTWRP, both of which provide strategic solutions for Hampshire and the Isle of Wight and involve reducing the amount of water that is currently discharged to sea. This will allow us to reduce the amount of groundwater we abstract from sensitive chalk streams. We also have similar schemes in other areas.
272.5	Given our comments above we whole-heartedly support the proposed catchment management and nature-based solutions, but again emphasise the need to ensure all elements of the water environment are considered in a more holistic approach, from flooding, wastewater management and water quality, through to the effects of drought and water security to both local catchments and habitats as well as residents and businesses.	The comment is noted.

Reference	Isle of Wight Council feedback	Southern Water response
272.6	<p>We welcome the option of a water recycling scheme on the Isle of Wight at Sandown, but we are concerned that the consideration of the risks posed by climate change are limited to the potential availability of water and not the vulnerability of either existing or proposed (water) infrastructure, or supporting infrastructure such as electrical supply, highway access or flood and coast defence options. The existing water treatment works at Sandown are already at significant risk from being completely surrounded by flood water, if not inundated. Further investment in an area already at high risk of flooding will have significant long term implications in terms of the ongoing requirement for coastal and flood defence. This comes at a time when public money is already stretched and in terms of long-term sustainable options that take all the implications of climate change into account, continuing a cycle of build – defend – build simply isn't sustainable, in addition to the increasing levels of residual risk and catastrophic failure.</p>	<p>We acknowledge and recognise the wider risks posed by climate change go beyond impacts on water supply and drought. Our climate change adaptation report available on our website (https://www.southernwater.co.uk/media/5453/5670_climatechangeadaptation_2021_v13.pdf) includes risk assessments for wider climate risks, including flooding and sea level rise, and the steps we will need to take to mitigate those risks. Our best value options appraisal methodology includes a range of resilience metrics that help us to understand the comparative performance and potential resilience benefits of each of our new supply schemes. The SEAs also consider how a given scheme will reduce vulnerability to climate change risks and hazards.</p> <p>The detailed design of schemes will take account of these risks and any potential design standards including flood risk or other infrastructure risks.</p>
272.7	<p>In terms of water efficiency measures, Southern Water should be aware of the draft Local Plan policy the council is currently pursuing, that has been developed in partnership with Southern Water supporting the existing target of a maximum of 100 litres per person per day, however this would be implemented from the date of plan adoption, not 2040. This does raise the question of whether or not, depending upon the policy and target approach taken by Southern Water, the Isle of Wight Council would be out of step with the development of water efficiency targets. This could be viewed as placing an unfair burden on the development sector and consumers on the Island. With this in mind, we would like to understand what the preferred approach of Southern Water will be for water efficiency measures and then based on this whether Southern Water are willing to continue supporting the proposed approach in the Isle of Wight Council's Local Plan (including timescales for adoption and implementation)? Given the necessity to protect our water resources as much as possible, which is even more apparent and necessary on the island to build resilience in our supply and less reliance on water arriving from the mainland, then we would support and encourage more ambitious water consumption targets</p>	<p>Our original 'Target 100' initiative was aimed at achieving a PCC of 100l/h/d across our company area, including existing housing stock; not just new builds. Our Sustainable Development Policy requires 85l/h/d in Sussex North WRZ where Natural England have issued a Position Statement on Water Neutrality. In other areas, we are promoting the use of the Waterwise Water Neutrality Hierarchy in the design of developments to reduce consumption through water efficiency, reuse by rainwater harvesting and greywater recycling and seek to support others to become more water efficient as a way of offsetting further demand. Some Local Planning Authorities (LPAs) are further ahead with water efficiency policies than others and we actively encourage early adoption where LPAs are able to do so.</p> <p>We recognise that some areas may find it more difficult to set policy to 100l/h/d immediately and that some will rely on the figures set in the Building Regulations so we are working with colleagues in the water industry, developers and land promoters to improve the policy drivers and enable more rapid change.</p> <p>LPAs leading the way will help us to demonstrate what is achievable and will encourage others to learn from them. We therefore welcome IWC's draft Local Plan policy of implementing a PCC of 100l/h/d for new developments on the Island. We will continue to develop engagement with all key stakeholders to</p>

Reference	Isle of Wight Council feedback	Southern Water response
	<p>within the DWMP that can then follow through into local plan policy – 100 litres per person per day in new build development is achievable now therefore waiting until 2040 to bring it in as a target would seem to be a missed opportunity. The development sector will react accordingly and having a consistent threshold across the Southern Water supply area as soon as possible will allow all local authorities to include such thresholds in emerging local plans, whilst also removing situations where water consumption targets are less onerous in one authority that adjoins another where they are more stringent.</p>	<p>enable progression and we encourage ambitious policies to enable us to achieve a water resilient future.</p>

14. Feedback by Langstone Harbour Board and our response

Reference	Langstone Harbour Board feedback	Southern Water response
278.1	<p>Introduction Langstone Harbour Board is the Statutory Harbour Authority for Langstone Harbour, constituted as a Trust Port. The statutes which give the Board its constitution require the Board to comprise six members each appointed from the two Local Authorities, one from the County Council, and two from a statutory local Advisory Committee. The Committee is comprised of elected members of stakeholder organisations with interests in Langstone Harbour and they provide an invaluable link between the Board and our harbour users.</p> <p>Despite an increase in the scientific output about water recycling technologies, the implementation of reverse osmosis processes for sewage effluent recycling has yet to be seen in the UK. Broadly, water recycling is not a new phenomenon and is practised on many different levels, whether capturing rainwater to water gardens or effluent recycling to supplement drinking water. We recognise that the use of environmental buffers such as lakes or reservoirs is best practice as natural systems have a high capacity to further purify water. The retention time of recycled water in natural systems degrades any remaining contaminants via physical and/or biological processes. Thus, we welcome that the Water Recycling Project explored the use of Havant Thicket for this purpose. However, we are concerned that the continual ‘topping up’ of the reservoir will eliminate the natural seasonal variations within the reservoir system and could result in changes to salinity, temperature, dissolved oxygen, and could risk algal blooms in the system. This then has an adverse effect on the Biodiversity Net Gain that was promised when the reservoir was given planning permission.</p> <p>Reclaimed water can offer both a viable and effective solution in areas where water resources are scarce,</p>	<p>The HWTWRP will use global best practice with a multi-barrier approach and monitoring to ensure the water quality is exceptional when transferred to the reservoir. The water recycling plant will also monitor the quality of the treated effluent from Budd’s Farm WTW and will shut down if any of the parameters are found to be untreatable. The recycled water will also have a lower nitrate level than the spring waters, due to treatment at Budd’s Farm WTW.</p>

Reference	Langstone Harbour Board feedback	Southern Water response
	<p>maintaining or increasing reservoir levels, and restoring wetlands and river flows during dry periods. It is advantageous in that it provides a consistent source of water that is unaffected by seasonal fluctuations and extreme weather changes. However, we must also acknowledge that the technology is not without its risks. If treatment is inadequate, there is a risk that the treated wastewater could do more harm than good, contaminating the reservoir with pathogens or altering the physiochemical properties of the reservoir through the accumulation of chemical or biological contaminants (e.g. pesticides and natural hormones, as well as endocrine disrupting chemicals). Concerns with the effectiveness of nutrient treatment/removal from wastewater raise the risk that should the treatment of effluent be insufficient, increased nutrient loading will affect the chemical balance of the reservoir water and may cause eutrophic conditions both in situ and in Langstone Harbour.</p>	

Reference	Langstone Harbour Board feedback	Southern Water response
278.2	<p>Langstone Harbour Board's concerns</p> <p>The Water Recycling Plant is being explored as a solution to supplement the deficit between water demand and availability. Improvements to demand management, capacity at existing reservoirs, and leakage across the region would be sufficient to provide a large proportion of the predicted demand and negate the need for a Water Recycling Plant. Whilst we welcome the fact that solutions to the water shortage issue are being explored, it is pertinent to note that there are large existing issues that have not been resolved, notably water quality across the region. It is questioned whether resources could be better distributed – solutions to capture rainfall will not only recharge aquifers ready for abstraction but will also prevent wastewater treatment works from reaching capacity and needing to discharge untreated stormwater into the environment.</p> <p>Langstone Harbour Board and our stakeholder community are cautious of Southern Water's ability to effectively deliver a project of this scale, due to the reputational impact of the £90 million fine received for unpermitted discharges. Residents are keen to see proven action on the company's part before they agree to a project of this magnitude. Residents were supportive of the Havant Thicket Reservoir development – this may not have been the case if Southern Water's intentions to discharge recycled effluent into the store were made clear from the outset.</p>	<p>Reducing demand is a key component of our strategy to maintain uninterrupted supplies in the future under all but the most extreme conditions. By 2050, we plan to halve leakage and reduce PCC to 110l/h/d under dry year conditions by 2045. We also plan to reduce non-household demand by 12% by 2037-38.</p> <p>However, demand management alone will not be sufficient to ensure uninterrupted supplies in the future given the size of the supply-demand deficit we face due to licence reductions in Hampshire, the need to improve the environment and population growth. We would still need options like the HWTWRP.</p> <p>We will carry out further public consultations on the HWTWRP as we progress so there will be opportunities for our customers and stakeholders to provide additional feedback.</p>

Reference	Langstone Harbour Board feedback	Southern Water response
278.3	<p>The site selected for the Water Recycling Plant, known as Brockhampton West or 'Site 72', is a former Council landfill located adjacent to Langstone Harbour. Langstone Harbour is environmentally sensitive and is designated as an SSSI, SAC/SPA, Ramsar wetland, and forms part of the Solent Marine Site (SEMS).</p> <p>The landfill was in use from 1969 until the 1990s, since when it has been surplus to operational requirements. The SCOPAC Coastal Landfills Study, conducted by the Eastern Solent Coastal Partnership in 2019, highlights that £500,000 has been spent refurbishing the site's coastal revetment over the past 25 years.</p> <p>The overall condition of the defence is deteriorating whereby each repair is the minimum amount required to prevent the landfill from escaping. We are concerned that a historic landfill, with defences at risk of failure, is not a suitable location for the treatment plant. It is currently unclear how landfill gas is managed on the site – a rigorous Gas Management Plan will need to be developed. Surface water on site will need to be surveyed, modelled, and considered in depth to prevent contaminated leachate from entering the Hermitage Stream and Langstone Harbour.</p>	<p>We are aware of this issue and as part of the DCO process are required to consider, consult and mitigate any potential impacts.</p>
278.4	<p>The impacts of the Recycling Plant and the discharge of flow from the reservoir to Langstone Harbour have not been modelled to include all potential impacts on the coastal habitats. Portsmouth Water were granted planning permission for the Havant Thicket Reservoir partly on the basis that this would be a spring water reservoir and would deliver a net gain benefit to the environment. A reduction in nitrate inputs to Langstone Harbour was promised as part of this new reservoir scheme – spring water which would have flowed into Langstone was to be pumped up to the reservoir for potable use. Nitrates in this spring water would naturally break down in the reservoir before flowing back down to the Harbour. This benefit will be significantly reduced under the new proposal as less spring water will be needed to be pumped up to the</p>	<p>The nitrate levels in the recycled water are significantly below (by over a factor of 10) than the raw spring water. Therefore, the treated wastewater discharge will not increase nitrate level in the reservoir.</p> <p>The primary purpose of the water recycling plant is to augment spring water, not to replace it. This is especially the case over the winter period when spring flows are highest. The transfer from Havant Thicket Reservoir to Otterbourne WSW, where operational, would require recycled water to maintain levels in the reservoir.</p>

Reference	Langstone Harbour Board feedback	Southern Water response
	reservoir, as it will be kept full throughout the year by the continued input of recycled effluent.	
278.5	Effluent recycling using the energy-intensive reverse osmosis process will produce brine as an end product, which will have to be discharged via a long sea outfall into the Solent. Brine is also the by-product of desalination and the effects of discharging it into the marine environment have been widely studied. The inherent salinity and temperature of this effluent can have detrimental effects on the marine environment. Estuarine species are often euryhaline, whereas many marine species are stenohaline and are limited by their narrow range of physiological tolerance. Salinities at the margins of this tolerance range have the potential to alter species' behaviour, limit reproduction, and reduce fitness for survival in their environment. Brine underflows also deplete concentrations of dissolved oxygen in the receiving water, which can cause anoxic conditions for benthic organisms, possibly translating into ecological repercussions throughout the food chain in the wider Solent European Marine Site.	The discharges from reverse osmosis are dependent on the salinity of the water treated. Reverse osmosis normally doubles the starting saline concentration. As the treated effluent has a lower salinity level, 1.5g/l, whereas sea water is 35g/l, the salinity in the waste stream will be around 3g/l i.e. a tenth of normal seawater found in the Solent. This is also a reason why the wastewater recycling plant is less energy intensive when compared to sea-water desalination.
278.6	<p>In Summary</p> <p>To be ready for the impacts of climate change and a growing population, alternative strategic solutions must be explored in further detail. We know that climate change will bring wetter winters and drier summers. Investing in natural solutions that capture and store winter rain, and ensure aquifers are sufficiently supplied during the summer, provide a wealth of ecosystem services, reduce fluvial flooding risk, and create vital wetland habitats to improve biodiversity. Additional winter storage reservoirs would provide a valuable addition to the aquifer recharge problem faced by water companies.</p>	<p>Our plan includes water storage and groundwater enhancement schemes where these are feasible.</p> <p>We are completing more in depth surveys and assessments as part of the EIA work being carried out for the HWTWRP. This will include impact on the marine environment. We will share the results in the forthcoming public consultation on the project.</p>

Reference	Langstone Harbour Board feedback	Southern Water response
	<p>Impacts of the aforementioned issues on the reservoir and heavily protected coastal habitats of the Solent need to be considered urgently as part of a comprehensive Habitat Regulations Assessment before approval is sought from the Secretary of State. We believe that Southern Water should take more time to consider and review the far-reaching ecological implications of the Water Recycling Plant and its links with Havant Thicket Reservoir, presenting the public with more information to help them make a suitably informed decision regarding the proposal.</p>	

15. Feedback by Lewes Town Council and our response

Reference	Lewes Town Council feedback	Southern Water response
341.1	<p>1. Do you support our alternative plan? Unsure.</p>	Not required.
341.2	<p>2. Is there additional local information we should consider when creating our final water resources management plan? Should liaise with the Sussex Biodiversity Records Centre and ensure more opportunities for local biodiversity. Should consider local authority planning policies on water resources in addition to rivers and water interest groups such as the Aquifer Partnership and Ouse and Adur Rivers Trust for example. There is a great deal of concern about water abstraction in the Ouse Valley basin. Can you clarify your plans in this area?</p>	<p>We operate several groundwater sources within the Brighton Chalk block and which are located within the operational catchment of the River Ouse. Following environmental investigations between 2011 and 2015, we are undertaking river enhancement of the lower reach of the Lewes Winterbourne.</p> <p>We are members of The Aquifer Partnership and will continue to work with stakeholders in the catchment to protect the environment, water resources and water quality. We are continuing to work with the EA to investigate the impacts of our groundwater abstraction on surface water resources and our plan assumes future reductions in our Brighton Chalk abstractions could be required, amounting up to 40MI/d by 2050.</p>
341.3	<p>3. Are there any additional cost-effective benefits we should consider and include in the plan? Requiring a more ambitious water usage per person per day target would alter cost-benefit scenarios especially in the longer term and impact on the building of or size of reservoir proposed at Broyle Place or Arlington. Developers should be required to specify maximum water efficiency measures in their planning applications.</p>	<p>We are aiming to achieve a PCC of 110l/h/d by 2050 under dry year conditions. We have also considered reducing PCC to 98l/h/d by 2045 under dry year conditions.</p> <p>We also plan to reduce non-household demand by 12% by 2037-38 compared to 2019-20 levels.</p> <p>We aim to reduce leakage by 50% by 2050 and have tested leakage reduction by up to 62% by 2050.</p> <p>As part of our demand management strategy, we will be looking to local planning authorities to implement standards that will require new builds to be more water efficient, ideally with a PCC of 85l/h/d, such that future growth does not lead to an increase in PCC levels.</p>
341.4	<p>4. Do you represent an organisation? Lewes Town Council</p>	Not required.
341.5	<p>5. Would you or your organisation be interested in collaborating with us to reduce water use? Yes</p>	Not required.

Reference	Lewes Town Council feedback	Southern Water response
341.6	<p>6. Are there any further comments you wish to make?</p> <p>Plans - whether Best Value or Alternative Plans - need to factor in climate projections and impacts for the area and incorporate climate resilience measures in a more detailed way.</p> <ul style="list-style-type: none"> Put environment at the heart of decision making; investing in nature-based solutions, incorporating a natural capital approach to cost benefit assessments, and adopting a target to exceed Biodiversity Net Gain requirements. Reduce the amount of water taken from the environment, through adopting a long-term target of 100 l/p/d or less by 2050. Ensure that Drainage and Wastewater Management Plans include a 2030 target for zero pollution incidents, and plans to end discharges from the most environmentally harmful CSOs. Invest in quality engagement with local communities, developing nature-based solutions in partnership. Educate and encourage behavioural changes to customers encouraging good practices like rain water harvesting. <p>We would need to see much more detail on a new reservoir at Arlington. And would only support the new reservoir if there was an overall biodiversity gain and new opportunities for nature and amenity use. Existing reservoir has been significantly impacted by hotter summers and new reservoir would have to be designed with this in mind.</p> <p>The scrapping of the Peacehaven recycling plant is also regrettable as it would seem to reduce dependence on gathering rainwater in reservoirs. There is no mention in the plan of how South East Water aims to tackle the problem of sewage discharges, which have raised a great deal of concern among residents of Lewes.</p>	<p>The Arlington Reservoir is being delivered by South East Water and does not directly provide a benefit to Southern Water. South East Water is best placed to respond directly on this issue.</p> <p>Similarly the Peacehaven Recycling Scheme is being led and delivered by South East Water. This scheme was not part of our preferred strategy for WRMP19 although it was considered as a strategic alternative. The scheme remains part of South East Water's dWRMP24 strategy.</p> <p>This plan relates primarily to drinking water resources and supplies. We would encourage Lewes Town Council to refer to our parallel DWMP for more detail on how we plan to reduce wastewater discharges.</p> <p>The average PCC varies by region. Even in our supply area, the PCC is different in each of our 14 WRZs as it depends on a number of factors such as property type, occupancy, age of occupants etc. It also varies depending on the weather conditions i.e. PCC in a normal year would be different from PCC in a year that is drier and warmer than normal. The data tables published as part of the plan contain PCC figures in a dry year and under peak demand conditions. The PCC of 146l/h/d refers to the average PCC figure across the company under dry year conditions.</p>

Reference	Lewes Town Council feedback	Southern Water response
	<p>Sustainable and efficient water usage measures should be retrofitted to existing buildings and as part of all new buildings to reduce overall per capita water usage to 100 litres per person per day rather than the current 112 litres per person per day 2050 target.</p> <p>We would also query data used in the plan. According to the plan each household uses 146 litres per day, but according to an Energy Saving Trust 2013 report At Home with Water, the average UK household then used 349 litres of water each day. More recently, Water UK reported in 2022 that the average individual use was 142 litres per day with the average family of four consuming as much as 500 litres per day. Could you clarify the 146 litre figure?</p> <p>Desalination plants should not be part of the plans due to the negative impact from construction and energy used in operation.</p>	

16. Feedback by Little Stour and Nailbourne River Management Group and our response

Reference	Feedback by Little Stour and Nailbourne River Management Group	Southern Water response
283.1	<p>We, the Little Stour and Nailbourne River Management Group, would like to make some comments on the Water Resource Management Plans.</p> <p>Southern Water and South East Water have not been pro-active at looking into the supply of water over many years. There is a great deal of talking at meetings, but delays and postponement of future investment over the last 50 years, has culminated in the postponement of projects such as the development of the Broad Oak reservoir.</p>	<p>We have worked closely with South East Water as part of the WRSE in developing and refreshing our WRMPs every five years in response to changes in guidance, delivery of planned schemes and update our forecasts of supply and demand.</p>
283.2	<p>If all the local and Government housing requirements are to happen over the next 20 years, where will all the water come from, especially in drought years and with climatic changing times ahead? Added to this are the major problems that continue to occur in the sewerage wastewater due to under investment.</p>	<p>Our baseline growth forecast for informing the future demand for water is based on housing plan data from Local Authorities in our supply area. We have in addition considered four other growth projections, 3 climate change scenarios and 3 drought scenarios to develop an adaptive plan that will allow us to maintain supply-demand balance over a wide range of future supply-demand situations.</p> <p>Our longer term plans for wastewater are included in our DWMP.</p>
283.3	<p>The amount of ageing water pipes and the continuation of so many water leaks, and wasted water (up to 20%) is unacceptable. It takes so much time to get your sub-contractors to fix issues and poor management year on year exacerbates the problems. There is a failure to converse with the local community and in our experience, even your own staff are not kept informed. The loss of experienced staff on the ground is so noticeable and heightens the issues. These problems lead to long delays, road closures with poor signage and the ensuing diversion chaos for the general public.</p>	<p>We are aiming to reduce leakage by 50% by 2050 and have tested a scenario where we reduce leakage by 62% by 2050. Our strategy includes replacing old water mains as well as investing in new technology to find and repair leaks more quickly.</p>
283.4	<p>We made the suggestion many years ago, although an expensive option, to draw water from other areas and with sea water all around us, to use the desalination of water to help the situation.</p>	<p>As part of developing our WRMP alongside other companies in the WRSE group, we are continually assessing opportunities for new transfers between the companies in the South East. A number of regional transfers are included in our plan, including new transfers from Portsmouth Water, South East Water and Thames Water.</p> <p>Our plan also includes a number of desalination options to allow us to reduce the amount of groundwater we abstract and provide increased protection for rivers and groundwater in our area.</p>

Reference	Feedback by Little Stour and Nailbourne River Management Group	Southern Water response
283.5	<p>Nothing has been said about who looks after the countryside — namely landowners and farmers.</p> <p>Farmers produce food for our country and water must be available for effective food production. Now the Environment Agency are looking at ways to reduce abstraction, thereby threatening the production of food for the country.</p>	<p>As described in Annex 9 of this SoR, we are working with landowners and farmers to protect and improve water quality through land use and catchment management.</p> <p>Like private abstractors, we are also facing pressure to reduce the impacts of our abstractions and are addressing this through our WINEP investigations and Environmental Ambition.</p>
283.6	<p>Since the year 2000, the climate has noticeably changed. We would historically see approximately 0.5 inches of rainfall in a day. Now we can see 2 inches. Flooding gets worse, and the water goes out to sea - such a waste. It must be collected.</p>	<p>The impacts of climate change, primarily on drought, are included in our supply forecast. In understanding future climate change, we have used the latest UKCP18 datasets produced by the Met Office.</p> <p>The impacts of climate change on infrastructure are considered as part of our resilience metrics and are further considered in our company climate change adaptation report.</p> <p>Our DWMP, being developed in parallel to our WRMP, describes the action we are taking to address flood risk.</p>

17. Feedback by Otterbourne Parish Council and our response

Reference	Otterbourne Parish Council feedback	Southern Water response
142.1	<p>Feedback overview</p> <p>In general we support the strategy for increasing water supplies over the planning period, i.e:</p> <ol style="list-style-type: none"> 1. Efficient use of water and minimal wastage across society. 2. New water sources that provide resilient and sustainable supplies. 3. A network that can move water around the region. 4. Catchment and nature-based solutions that improve the environment we rely upon. <p>The multiple layered approach taken provides assurance that the shortfall in water projected can be achieved, whilst respecting the needs of the environment. It aligns well with the draft regional water resources plan for the South East outlined by Water Resources South East (WRSE) and by other water companies for their plans at various webinar presentations.</p> <p>The detailed feedback provided below addresses those layers and is followed by some specific items at the end.</p>	Not required.

Reference	Otterbourne Parish Council feedback	Southern Water response
142.2	<p>Efficient use of water and minimal wastage across society</p> <p>Reducing Leaks The plan to reduce leaks by at least 50% by 2050 appears to lack ambition when there is scope to achieve 62% by embracing technology and replacing old mains. Sensor, digital and other relevant technologies can be expected to develop significantly in that (25 year) time frame bringing excellent opportunities for improvement in monitoring the water supply network and taking preventive measures.</p> <p>Taking a more proactive approach to replacing old mains is to be encouraged. It will also be welcomed by Otterbourne residents who suffered significant water stoppages in the period leading up to Christmas in 2022 due to major water leaks as well as a major sewage leak that has polluted the nearby River Itchen. A target of 60% would therefore seem a suitable and realistic target for the plan, saving another 9 million litres a day.</p> <p>Although relatively small in terms of water volume this would save, the impact of leaks causing cuts in water supply and wastewater/sewage leaks causing local pollution incidents often feature prominently in the media and results in a poor public perception of Southern Water's service performance. Further investment in this area in a well-publicised programme supported by positive and urgent responses to major leaks would help to turn around the low sense of confidence and trust that currently pervades in Southern Water's overall ability to deliver quality services.</p>	<p>We are targeting 50% leakage reduction by 2050. This is to be achieved through replacing of old water mains as well as investment in new technology that will allow us to find and fix leaks more quickly.</p> <p>We have considered additional leakage reduction by up to 62% by 2050. However, higher target comes with higher delivery risk. We have taken this into account when setting our leakage reduction target.</p>
142.3	<p>Water Efficiency We support the planned reduction to 109 litres per person per day by 2040 required by the demand forecast in the Plan. Although we also support Southern Water's ambition to reduce average daily use to 100 litres per person per day by 2040 we recognise that the additional reduction would prove hard to achieve across the entire customer community.</p> <p>In addition to the measures to promote water efficiency outlined in the Draft Plan it is also suggested that daily water</p>	<p>We are aiming to achieve a PCC of 110l/h/d under dry year conditions by 2045. This effectively equates to a PCC of 100l/h/d under normal year conditions. We have also tested a scenario whereby we reduce PCC to 98l/h/d by 2045.</p> <p>We recognise the importance of providing consumption information to our customers to encourage efficient use of water both at home and at workplace. The smart metering programme is a key enabler to achieve our PCC target, which will not only enable customers to view and reduce their consumption (and bills) but also supplement it with useful tips and actions to save water. We</p>

Reference	Otterbourne Parish Council feedback	Southern Water response
	<p>consumption figures per household are provided in water bills. This and the reduction target information would allow Southern Water customers to calculate their own average daily consumption and compare this with the target. Such information could be provided in the near term and form part of the awareness campaign water efficiency measures need to be successfully adopted across the board.</p>	<p>are currently running a smart metering pilot with 1,500 customers with access to daily usage data along with tips and nudges; the learnings of which will be scaled up as part of smart metering programme planned for implementation in AMP8.</p>

Reference	Otterbourne Parish Council feedback	Southern Water response
142.4	<p>New water sources that provide resilient and sustainable supplies</p> <p>This item is of particular concern to Otterbourne Parish Council. Providing required water quantities to meet the projected challenges of population growth (increasing demand) and climate change (reducing available water) whilst also reducing abstraction from the sensitive chalk Test and Itchen rivers is seen as essential in this part of Hampshire. The case made for the water transfer and recycling solution chosen from the various strategic resource options considered appears sound for the required amount of water envisaged. In principle, therefore, we agree that the water recycling project has a role to play in securing water supplies for the future in this part of Hampshire. However, the size of the proposed water recycling plant and the timing of its development are both questioned when the following factors are considered:</p> <ul style="list-style-type: none"> • The proposed water transfer and recycling project is set to achieve project delivery commencement following DCO Consent in 2025. • After becoming operational in 2029-30, the approved Havant Thicket Reservoir project will provide bulk water deliveries to this part of Hampshire and also serve to protect the Test and Itchen by reducing water abstraction levels. • Potential for transfer of up to 120 million litres per day from Thames Water via a new strategic pipeline when combined with new strategic sources such as the South East Strategic Reservoir (SESRO) should that go ahead. The size of the strategic reservoir could mean a smaller recycling plant is needed at Havant. • Uncertainty in both population growth and the impact of climate change over the planning period. <p>In light of the above factors a delay is recommended in the decision to proceed with the Hampshire Water Transfer and Water Recycling Project (HWTWRP) until 2030. This aligns with the population growth decision point in the Adaptive Planning Approach used in the dWRMP to address uncertainty. We believe this would provide the following benefits:</p>	<p>Our water efficiency and leakage reduction measures, although ambitious, will not be sufficient to address the supply-demand deficit we face in Hampshire due to the licence changes that have been implemented.</p> <p>Under the Section 20 agreement we have signed with the EA, we are required to progress HWTWRP as soon as possible in order to protect the environment in rivers Test and Itchen. Delaying a decision until 2030 would delay the scheme to 2040 or later, due to the length of delivery for strategic schemes of this size. This may not be acceptable to the EA, Natural England and other stakeholders in the area.</p>

Reference**Otterbourne Parish Council feedback****Southern Water response**

- Greatly reduced uncertainty in consumer population numbers.
- Opportunity to fully assess the impact of bulk water transfer from Havant Thicket Reservoir in terms of meeting water provision requirements and the environmental benefits of reduced water abstraction from the Test and Itchen rivers.
- Opportunity for further investigation and planning for HWTWRP, reducing project risk and increasing confidence in project costs (e.g. through extensive bench marking) and the ability to deliver the project.
- Full environment impact assessment of recycling plant operations on Havant Thicket Reservoir.
- Time for consideration of the SESRO and other new water resources and their impact on the size of recycling plant required.
- Assessment of the effectiveness of the leak reduction and water efficiency programmes, helping to better define the actual need for additional water.
- Drawing on lessons learned from other water recycling projects, e.g. it is understood⁵ Thames Water has experienced significant problems shutting down and restarting the reverse osmosis component of a major water recycling system that operates under similar conditions to that envisaged for HWTWRP.

Overall, such a delay would give increased confidence in the scope, plans and costs for the water recycling project. Data provided in the dWRMP shows that a delay would not unduly impact meeting the projected shortfall in water provision. To proceed with the current plan and time scale runs the risk of exceeding the true water requirement, delivered at a higher than needed cost. At a time when Southern Water customers are faced with increased costs in their water bills arising from the Havant Thicket Reservoir project, the HWTWRP project should not proceed as planned and only when clearly justified in the light of the factors above.

Reference	Otterbourne Parish Council feedback	Southern Water response
142.5	<p>A network that can move water around the region Many of the water supply and environmental benefits made available by new water sources across the WRSE area of operations would not be realised without a supporting network of new pipelines. Given the ‘water stress’ experienced in the South East the provision of a wider network linking to other regions where water is naturally more abundant will further increase water resilience vital to this region.</p>	<p>In addition to developing new water resources, we are improving network connectivity in our supply area, especially in Hampshire so that we can better move water from areas of surplus to areas of deficit. Our plan also includes new bulk imports from Portsmouth Water, SES Water, South East Water and Thames Water.</p>
142.6	<p>Catchment and nature-based solutions that improve the environment we rely upon Locating additional water catchment areas and nature-based solutions is supported. Although these solutions are unlikely to yield significant volumes of water these are sustainable sources unlike the large recycling and desalination solutions included in the Draft Plan that they would help to offset in terms of climate impact.</p>	<p>We recognise the importance of catchment based solutions and are in the process of implementing some during the current 5-year planning cycle up to 2025.</p>
142.7	<p>Other Items Temporary Water Restrictions We support the continued use of temporary restrictions in prolonged dry spells and droughts i.e. hose pipe bans, as this will reduce the need for water abstraction from the Test and Itchen rivers. Building in water resilience into the water supply network, in particular large scale infrastructure projects such as HWTWRP to achieve the stretch target posed by the ‘Once in every 500 years’ emergency drought event, runs the risk that consumers feel they need not worry about water supplies being cut off that then encourages poor behaviour in the way water is used. Such temporary restrictions will help remind consumers that we cannot continue to take water for granted and that it will always be there when needed.</p>	<p>As mentioned above, improving water efficiency and reducing leakage remains a core pillar of our strategy alongside infrastructure schemes to deliver more water. We propose to meet our water efficiency targets under all scenarios, not just in a drought.</p> <p>We have also improved the narrative in our revised dWRMP24 around temporary water restrictions so it is clearer how often they might be introduced and the reasons behind them. Details on introduction of temporary water restrictions are provided in our Drought Plan.</p>
142.8	<p>Research and Development Use of modern technology to enhance water services is mentioned at various points in the Draft Plan. However, given we can expect significant developments in technology such as remote sensing, digital techniques and material science reference to investment in R&D and how this is coordinated across the WRSE region for the benefit of water provision would be welcomed</p>	<p>We are looking to make use of the latest technology, both in reducing demand and in delivering supply-side schemes, for reducing costs as well as environmental impacts at various stages of scheme delivery.</p>

Reference	Otterbourne Parish Council feedback	Southern Water response
142.9	<p>Costs</p> <p>In view of the recent Ofwat Cost Adjustment consultation for the Havant Thicket Reservoir project where costs have risen nearly threefold can the figures provided in Draft Plan be considered as a realistic projection for the programme total cost and the increase Southern Water customers can expect in their water bills? Much needs to be done to reassure them that large infrastructure projects such as HWTWRP are genuinely needed and the proposed approach does indeed provide 'Best Value'. Furthermore, Southern Water customers will need to be reassured they are being treated fairly in their water bills when compared with other water consumers in the South East and England.</p>	<p>The investment outlined in our dWRMP24 is required to provide the level of environmental protection and increased resilience as required under the WRPG. As there are limited options to take any more water from rivers and groundwater in our supply area, we have to rely on options such as water recycling, desalination and long-distance transfers which are costlier to build and operate. This has an impact on customer bills. As a result, customer bills in our supply area may be higher than customers in other parts of the country where pressures on water resources are lower.</p>
142.10	<p>Risk Approach</p> <p>Although understanding risk is part of the RAPID methodology used to help formulate the Draft Plan, there is no specific reference of how risk assessment has been used to enhance the Plan, e.g. making the analysis and recommendations more robust when subject to detailed scrutiny.</p> <p>Examples of risks that when examined and effective measures identified to avoid them or mitigate their impacts could help to assure consumers in the robustness of the recommended plan:</p> <ul style="list-style-type: none"> • Cost overruns causes loss of confidence and public support for further investment in water infrastructure projects. • Major leaks continue to erode public confidence and support. • Public take up on water efficiency measures slips and eventually fails. • Deliberate attacks on the digital network and physical infrastructure. • Excessive nitrate and phosphate pollution denies access to major water sources. 	<p>Metrics to provide increased resilience are a key aspect of our best value decision making approach and our revised dWRMP24 provides more detailed narrative on the approach and the resilience benefits that our strategy will provide.</p>

18. Feedback by Piscatorial Society and our response

Reference	Piscatorial Society feedback	Southern Water response
274.1	<p>I write on behalf of the Piscatorial Society, who lease the fishing rights on approx. 3km of the Candover Brook between Abbottstone and its confluence with the main River Itchen at Itchen Stoke.</p> <p>It was our understanding from the last round of consultations in 2018 that once the Havant Thicket reservoir was completed and filled there would be no need for the Candover scheme. Havant Thicket reservoir was essentially a swap for Portsmouth Water's PWC Source A abstraction on the lower Itchen of 35MI/d. This water would then be used by Southern Water for the Southampton area. The 27MI/d during a drought period from the Candover scheme would therefore not be required.</p> <p>Expanding the role of the Candover scheme in your Drought Planning goes against the 2018 Section 20 Agreement and is not what was agreed upon following the closing of the Inquiry in 2018.</p>	<p>We are committed to removing the reliance on the Candover scheme as soon as practical as agreed under the Section 20 agreement with the EA.</p> <p>In the longer term, we planning to end reliance on supply-side drought permits and orders across our supply area by 2041, unless we face a drought of greater than 1-in-500 year severity. Under our Environmental Ambition and adaptive planning approach, we are considering a range of potential outcomes whereby we will significantly reduce abstraction from the Itchen Catchment including complete cessation by 2050 under the highest environmental benefit scenarios. We are also planning to cease use of our Alresford groundwater source from 2030 following recent environmental investigations under the Habitats Directive.</p>
274.2	<p>We are keen to be involved in meaningful discussions but feel the time provided for the latest consultation gives us very little time to understand and respond in an informed way.</p>	<p>We welcome your contribution to this consultation and will be happy to continue engaging with you and other stakeholders as we progress our plan.</p>

19. Feedback by Pulborough Parish Council and our response

Reference	Pulborough Parish Council feedback	Southern Water response
303.1	<p>Pulborough Parish Council (PPC) would like to take this opportunity to thank Southern Water for sharing the Water Resource Management Plan (WRMP) with us. Please find our response, set out below, please accept our apologies for the late submission, though it is hoped this submission will be accepted as part of the consultation process.</p> <p>PPC sits within the heart of West Sussex on the edge of the South Downs National Park. The tidal River Arun and Stane Street (A29) have and are integral to the prosperity of Pulborough since Roman times. The village of Pulborough has some 5000 residents, with the villages and hamlets of Nutbourne, Codmore Hill, North Heath, Gay Street, Toat, Pythingdean, and Lee Place. PPC falls within the administrative districts of Horsham District Council and West Sussex County Council. The Parish Council carries out many roles, responsibilities, and duties within the Parish, one of which is as statutory consultee to planning applications.</p> <p>PPC sits within the Water Neutrality zone and has first-hand experience of the impacts on development of the current restrictions. PPC would like to offer the following observations on Water Resource Management Plan draft proposals:</p>	<p>The comments on our dWRMP24 are noted and we welcome the contribution to the consultation.</p>
303.2	<p>PPC do not agree with desalination plants along the coast to better manage water supplies - Desalination is an extremely intensive process which requires significant energy to produce potable water. There are also concerns of placing such infrastructure along the South Coast with predicted sea level rise and suitable protection of such infrastructure with the associated costs such infrastructure and processes will be passed onto customers and ultimately residents of PPC.</p>	<p>Desalination option on the Sussex Coast has been removed from our revised dWRMP24. However, our plan does include other desalination options. We have very limited options to take any more water from rivers and groundwater. In fact, we are required to reduce the amount of water we already take from the environment. This means that we have to rely on options like desalination, water recycling and long-distance water transfers.</p>

Reference	Pulborough Parish Council feedback	Southern Water response
303.3	PPC do not agree with water transfer between Thames Water and Southern Water. Whilst it is accepted that water companies across England are exploring such opportunities it is considered unrealistic. The current water shortages in Thames Water's London Region of over 350MI/d and the SWOX region currently in surplus of an estimated 80MI/d it is difficult to understand where Thames Water could provide 120MI/d, once Thames Water's future projections are considered it appears inconceivable how water could be transferred between regions. Whilst Thames Water have been considering water transfer from Severn Trent via Lake Vyrnwy, route planning has only just started with an extremely ambitious target of delivery by 2035 or end of AMP9. It is felt this approach of transferring water from North Wales is not sustainable and does not account for the current drought conditions Wales experienced during 2022.	A key objective of regional planning is to consider the water needs of the region as whole without being constrained by water company boundaries to allow for better management and sharing of resources across the region. T2ST has been developed after taking into account the water needs of Thames Water customers under a range of planning scenarios and the options that both Thames Water and Affinity Water plan to develop over the next 10-15 years.
303.4	PPC would encourage Southern Water to explore other methods of water resource management such as artificial recharge of the aquifers with which both Thames and Affinity water have had success.	Please see Annex A for our response of ASR schemes.
303.5	PC would encourage Southern Water to expand their current approach to 'Black' water recycling and learn from the current experiences and negative feedback currently experienced on the Budds Farm to Havant Thicket proposal. It is a discussion which will have to happen, it could be considered sooner rather than later and may be an approach, but discussion should happen.	<p>We consider water recycling to be an important source of potable water in the future. We have carried out extensive consultation on the HWTWRP and will be carrying out further consultations as we progress the scheme.</p> <p>We also have two water recycling schemes directly relevant to Pulborough Parish Council, our Littlehampton WTW recycling option that is being progressed and our proposed future Horsham WTW recycling option.</p>
303.6	PC wholeheartedly agree and support Southern Water in the removal of 'Right to connect' whether or not Schedule of the Flood and Water Management Act 2010 is enacted	The comment is noted and the support in this regard is welcome.
303.7	PPC would encourage Southern Water to be more transparent and forthcoming in the promotion of the current Ofwat approved Sewage Sector. Guidance (SSG) for the adoption of sewers including green infrastructure to better manage water resources on development and the local catchments. The PPC would actively support and encourage Southern Water to go above and beyond the SSG and promote their own guidance for Sustainable Drainage Systems (SuDS) such as Anglian Water has.	We refer to our DWMP which has been developed in parallel to our WRMP for a description of our plans regarding drainage and wastewater management.

Reference	Pulborough Parish Council feedback	Southern Water response
303.8	PPC support Southern Water in becoming a statutory consultee for planning applications.	The feedback and support on this issue is acknowledged.
303.9	PPC actively supports Southern Water's Aspirations for 100l/h/d and would support such targets on response to planning applications. However, given the issues of water neutrality within the Parish, the Council are supportive of the current thinking of 85l/h/d as such PPC would welcome Southern Water's support on such proposals.	We are pleased to note that that PPC is keen to promote the 85l/h/d PCC target for new builds. We have embedded this into our Sustainable Development Policy which has been actively promoted since 2022. We would be very keen to see this commitment embedded into planning policy where possible. It aligns with the proposed target in the Part C Strategy for Water Neutrality published by the LPAs affected by the Natural England Position Statement on Water Neutrality and we have been engaging with developers in the area to help them to make progress towards achieving this. More information on how we are embracing the opportunities around water neutrality you can be found by joining our group by emailing waterneutrality@southernwater.co.uk for a quarterly webinar and monthly newsletter.
303.10	PPC would like to see a targeted programme of smart water meters rolled out within the Parish with particular help and support given to our elderly, vulnerable and those struggling with the cost of living especially within a rural economy.	We are aiming to replace all our existing household meters with smart meters by 2030. This will allow us to proactively engage with our customers and help them reduce their water consumption.
303.11	PPC would like to see a more proactive and targeted response to water leaks regardless of the current approach to 'economically viable'. There have been too many instances of large volumes of potable water being wasted a recent example of 200l/d for a considerable amount of time with little or no action.	We are aiming to reduce leakage by at least 50% by 2050 in line with regulatory guidance. Aiming for higher targets than required by regulatory guidance carries additional deliverability risk. We have taken this into account when finalising our demand management targets.
303.12	PPC would like to see Southern Water's free water-saving home visits promoted actively within the Parish with PPC helping to share the message to encourage greater water saving within the village.	We have revised our free water efficiency home visits programme to prioritise and target high users (e.g. household usage >500 litres per property per day) and align with industry insights to make our offering more effective, providing more value for investment for our customers. We welcome PPC's suggestion to help promote this activity which could increase uptake on home visits.
303.13	PPC would like to work with Southern Water to seek opportunities to undertake projects which could have potential positive impacts on water resource management. Whether this is using Natural Flood Management (NFM) along watercourses to retain more water upstream including in soils. Or to look at possibilities to 'Daylight' surface water sewers, such as the recreation ground, which could better manage surface water flows within the village reducing flood risk and pollution incidents. PPC would look to use their	We support the development of catchment-based approaches through our Catchment First programme and the development in parallel of our DWMP.

Reference	Pulborough Parish Council feedback	Southern Water response
	networks to introduce Southern Water to landowners and appropriate stakeholders to create long term beneficial partnerships.	
303.14	There is one Raingarden in the village alongside the A29, PPC would like to install further such infrastructure to create a network throughout the village to reduce flood risk and reduce the impacts on the foul sewer system.	We support these approaches and would encourage PPC to contact our DWMP team. More information on our DWMP can be found here: https://www.southernwater.co.uk/dwmp
303.15	PPC would like to work with Southern Water to seek local opportunities to undertake De-pave projects to 'free the soil' or encourage residents to use water butts also to look at other small scale opportunities residents can take up individually but cumulatively have a significant impact on water resource management.	We support these approaches and would encourage PPC to contact our DWMP team. More information on our DWMP can be found here: https://www.southernwater.co.uk/dwmp
303.16	PPC hope Southern Water find the above response constructive and positive. PPC would welcome further discussions with Southern Water to explore the opportunities mentioned and to develop a positive and mutually beneficial working partnership.	We thank the PPC for its feedback and welcome any opportunities to work with PPC to better support our customers in the area.

20. Feedback by Rowlands Castle Parish Council and our response

Reference	Rowlands Castle Parish Council feedback	Southern Water response
101.1	<p>Rowlands Castle Parish Council ('RCPC' or, 'the Council') has carefully reviewed the draft SW WRMP and the extensive letter below lays out the Council's detailed response and concerns with respect to the Draft Plan in 3 parts, 1) Key Points and comments with regard to SW WRMP, 2) generic comments on future water management and 3) in Annex A the answers to the 20 questions posed by Southern Water in its WRMP.</p> <p>It is recognised that there will be increasing pressure on our water supplies as a result of a steadily increasing population, both for household and business/industry use and also because climate change could make an adverse impact on how much rain will fall in the UK each year and when. However, on the basis used in medicine that 'prevention is better than cure' so the adage 'achieving a good reduction in water excessive use and unnecessary loss is better than spending millions of pounds unnecessarily in infrastructure additions' should apply to the water industry and its users. Thus some proposed measures to combat potential water shortage are much more attractive in terms of lower costs and positive contribution to climate change factors than others and they can be implemented sooner.</p> <p>RCPC considers the huge additional costs to consumers plus the high energy requirements long term of major projects such as recycling or desalination are entirely at odds with what should be the water companies priorities; these should be holding down costs to consumers, positively contributing to a reduction in carbon, energy and chemical use and working to retain the water that is freely given from the skies when it rains. Therefore the Council opposes the drive to build recycling plants as a priority (and also desalination plants) and wishes the relatively cheaper and quicker options to implement should be taken forward first.</p>	<p>We welcome the feedback by RSPC. The comments are noted.</p> <p>The opportunities to take any more water from rivers and groundwater are extremely limited. As a result of our WINEP investigations, we are expecting a reduction in the volume of water we can take from a number of our existing sources. As part of Environment Destination scenarios, we are required to not only preserve but enhance the environment where possible. This means that we have to rely on options such as desalination, water recycling and long-distance transfers to meet future demand.</p> <p>While cost is key criterion in our options appraisal process, potential revenues and return on investment play no part in our option selection and are not considered in development of WRMP.</p>

Reference**Rowlands Castle Parish Council feedback****Southern Water response**

Water company charges (and therefore revenues) are determined by Ofwat, based on the costs presented by the companies, including an inflation-linked factor to ensure attractive returns to investors. There is thus a financial incentive to boost 'investment' and therefore returns to shareholders and owners. RCPC is greatly concerned that this attitude persists today and that WRMPs reflect the desire to make good profits for owners and shareholders rather than provide cost-effective solutions both for consumers who have to pay for all the developments at a time of increasing poverty and the environment, which suffers from the increase in climate change. This attitude must not be allowed to continue unchecked.

These and other Key Points, general comments on future water management that apply across the whole industry and the answers to each of the 20 questions posed within the WRMP are all covered in our letter. The Council hopes that Defra understands the considerable concerns held by our residents who are all consumers of water and acts accordingly.

101.2

Key points

- The Plan needs a more challenging target for reducing leakage, a 50% reduction by 2050 still leaves some 46 million litres per day being lost into the ground. This daily loss of water that has been treated at a cost is unacceptable and this must be addressed as a high priority by setting a target of at least a 75% reduction in leaks and preferably a stretching objective of 90% reduction.

We are aiming to reduce leakage by 50% by 2050 and have tested a scenario of reducing it by 62%. However, aiming for higher target carries additional deliverability risk. We have taken this into account in setting our demand management targets.

Recycled water will have lower nitrate levels than spring water and we will be using best industry practice for recycling water with the option for the water recycling plant to shut down automatically if any of the water quality parameters exceed treatment levels.

Reference	Rowlands Castle Parish Council feedback	Southern Water response
	<ul style="list-style-type: none"> The Council does not support either effluent recycling or desalination as preferred solutions to solve the potential water shortage when there are other, environmentally better solutions available to progress first and when for much of the year the costly production of recycled water is unnecessary because of good rainfall and full rivers/aquifers. Following on from the above key point, the Council firmly opposes the Southern Water proposal to pump recycled effluent into Havant Thicket Reservoir (HTR) as an Environmental Buffer Lake, thus diluting the high-quality chalk-aquifer-derived water within it and negating the environmental benefits promised when the HTR planning application was submitted. There is a need to store the water falling freely from the skies in wetter winters in reservoirs and confined aquifers, keeping them topped up for any drought period. The lack of focus on using this freely available water is astonishing! Water companies should not reduce the requirement or frequency of hosepipe bans or other water use restrictions in times of shortage as this sends out entirely the wrong message that people can continue to use water freely when there is a drought. Interim solutions should be sought by developing smaller, less expensive schemes and generally reducing customers' demands through education and advice that cumulatively may well address the presumed water shortfall in future years. This would obviate the need for large infrastructure projects that remain expensive to run and carbon-use intensive over decades, further adversely impacting the environment. 	<p>We agree that storage reservoirs likely to be useful to help mitigate the most likely effects of climate change, mainly wetter milder winters and drier hotter summers by providing additional storage.</p> <p>We will continue to explore the potential for future reservoir options as part of our planning process. Our current plan proposes two new reservoirs (Havant Thicket Reservoir and the River Arun Offline Storage) and includes additional plans to expand Bewl Reservoir and combine both Bewl and Darwell reservoirs with water recycling schemes which would further augment storage.</p> <p>We will continue to explore potential reservoir options as part of our options appraisal process. We will also undertake further work to identify additional reservoir options as part of options appraisal process for future planning cycles.</p> <p>We are aiming to reduce PCC to 110l/h/d by 2045 under dry year conditions. We also plan to reduce non-household demand by 12% by 2037-38 in addition to leakage reduction mentioned above.</p> <p>Our plan includes a number smaller schemes but these, together with our demand management options, are not sufficient to address the supply-demand gap we face.</p>

Reference	Rowlands Castle Parish Council feedback	Southern Water response
101.3	<p>Further comments re Southern Water WRMP</p> <p>RCPC considers the huge additional costs to consumers plus the high energy requirements long term of major projects such as recycling or desalination are entirely at odds with what should be the water companies priorities; these should be holding down costs to consumers, positively contributing to a reduction in carbon, energy and chemical use and working to retain and store the water that is freely given from the skies when it rains. Therefore the Council opposes the drive to build recycling plants as a priority (and also desalination plants) and considers the relatively cheaper, more environmentally friendly and quicker options to implement should be taken forward first. If Thames Water receives approval for the new Oxfordshire reservoir and some transfer schemes are approved there may not be a need for large effluent recycling schemes.</p>	<p>The opportunities to take any more water from rivers and groundwater are extremely limited. As a result of our WINEP investigations, we are expecting a reduction in the volume of water we can take from a number of our existing sources. As part of Environment Destination scenarios, we are required to not only preserve but enhance the environment where possible. This means that we have to rely on option such as desalination, water recycling and long-distance transfers to meet future demand.</p>
101.4	<p>RCPC is concerned that Southern Water does not recognise that water will be freely available in wet winters that will now be more common due to the warm wet climate at that time of the year. This will negate the requirement to recycle large quantities of treated water and make investing in such infrastructure even more unnecessary when there is no requirement for the water. There is also insufficient consideration given to using confined aquifers to hold water, topping them up from the rivers in winter, except for one scheme on the River Test which is delayed until 2041! Why is it delayed when that area is exactly where the water is needed now?</p> <p>The Council is also concerned that there is reference to needing to address a 1-in-500-year drought that is mentioned in National Guidelines (i.e. it is guidance only).</p> <p>This requirement is skewing the WRMP towards building recycling plants and desalination plants to meet an extremely rare occurrence when other cheaper solutions, properly implemented, may result in no drought restrictions at all.</p>	<p>In producing our supply forecast, we have considered the impact of climate change on our existing sources of water.</p> <p>We have considered ASR schemes for our plan (see Annex 8 of our SoR). The River Test MAR scheme requires extensive investigations to assess its technical viability and any environmental impacts. This is a requirement by the EA and Natural England, as expressed in the response to this consultation, to support the development of this schemes. We therefore need to allow sufficient time for the investigations to be complete.</p> <p>Achieving resilience to 1-in-500 year drought in a requirement under the WRPG. It is not Southern Water decision.</p>

Reference	Rowlands Castle Parish Council feedback	Southern Water response
101.5	<p>Southern Water has published a very high-level Strategic Environment Assessment but has not yet completed modelling to be able to understand the impact of water recycling on either Havant Thicket Reservoir (HTR) or on the local coastal area (Langstone Harbour). Therefore how could the company have quantified the environmental risk?</p> <p>Effluent recycling is a complex process, requiring a steady treatment stream, highly trained operators and regular maintenance. Southern Water has a poor track record on pollution incidents, general maintenance and compliance with regulations generally. How can they be trusted to properly treat the recycled effluent? There only needs to be one failure in the recycling process to adversely affect the environment at HTR.</p> <p>RCPC is concerned that the Gate 2 documents produced by Southern Water have been massively redacted to remove most of the key facts on the grounds of commercial sensitivity. It has proved very hard for members of the public to get a full understanding of the options considered and the costs, benefits and drawbacks. There is a lack of transparency that is frankly worrying in the matter of our future water supply, particularly when SW has such a poor reputation already with the public it purports to serve.</p>	<p>A range of studies and investigations are ongoing as part of the consenting process for the HWTWRP. We will prepare a preliminary Environmental Information Report (EIR) which will form part of our next stage of public consultation in 2024.</p> <p>The EIR will report the preliminary findings on any likely significant environmental impacts of the project based on the information available at the time and is designed to inform consultees' responses to the next consultation.</p> <p>We will continue to undertake environmental assessments and the main EIA will be documented in an Environmental Statement that will be submitted as part of the DCO application.</p> <p>Our initial modelling indicates that the average concentration of nitrates in the recycled water put into the reservoir would be significantly lower than the levels found in the spring water – 0.1mg/l in recycled water, compared to 30mg/l in Havant spring water and 34mg/l in the water from Bedhampton springs.</p> <p>We are working with international experts on water recycling to ensure that the system we propose incorporates the most up-to-date safety standards, monitoring and fail-safes. Any recycled water that does not meet the required standards will not be passed forward into the reservoir.</p> <p>Commercially sensitive information will always need to be redacted from published documents but we are ensuring that all relevant details of costs, benefits and impacts of potential solutions are thoroughly explored in our consultation documents. We are working hard to rebuild our reputation and regain the trust of our customers and communities.</p>
101.6	<p>There has been a lack of engagement by both SW and Portsmouth Water (PW) with customers to determine if people are prepared to drink recycled effluent.</p> <p>If recycled water has to be produced, Peel Common Waste Water Treatment Works (WWTW) has been proposed by Southern Water as an alternative site for effluent recycling. It has advantages, including a shorter pipeline to get the water to where it is needed with less pumping required. SW even recognised in their own Gate 2 report that it would be better for the coastal environment to use the Peel Common WWTW and Ofwat have approved funding to develop this</p>	<p>We did consider Peel Common WTW as a potential recycling site. However, the use of Peel Common WTW would not provide the volume of water required as its capacity is only about a third of the Budds Farm WTW and would have similar environmental and delivery risks. It would also involve construction of pipelines potentially across the River Itchen SSSI and the Itchen SAC to reach Otterbourne WSW. There would also still be a need for an environmental buffer to ensure dilution and mixing with non-recycled water. This would either require use of Havant Thicket Reservoir or an alternative new body of water, for example the River Itchen or a new lake at Otterbourne WSW.</p>

Reference	Rowlands Castle Parish Council feedback	Southern Water response
	<p>scheme in parallel to the Budds farm WWTW yet SW are not doing this – why not?</p> <p>The proposed site for the Water Recycling Plant at Broadmarsh is contaminated and unstable land. It was created as a ‘dilute and disperse’ landfill on the edge of Langstone Harbour with no pollution control or leaching barriers. It will require massive piling through the landfill to get at the chalk substrate and there is gas emerging at the surface. It is altogether a most unsuitable site for the recycling plant and the pipelines proposed.</p> <p>When Southern Water conducted a consultation in summer 2022 it was indicated that recycling treated effluent from Budds Farm WWTW only needed to provide 15MI/d in the early years but the company wanted the option to expand the scheme to be able to treat up to 60MI/day, by adding treatment modules at a later date that, in conjunction with the reservoir, could deliver up to 90MI/day in the long-term. Therefore in the short term if they prioritise options that can deliver 15MI/day between 2025 and 2030-35, such as those discussed in this letter, then a decision on effluent recycling is not needed now, it can be deferred to 2030. That buys more time for progress to be made on the impact assessments and regional transfer options. If regional transfers can then be confirmed as feasible by 2030 (the next critical decision point), the current need to press for large environmentally unfriendly, carbon hungry, effluent recycling schemes, which have to be operated all year round despite only being needed in a severe drought, is greatly reduced and the decision can be deferred. This extra time should enable water companies to look for more environmentally friendly solutions and allow for technological advances in treatment to be developed that should be less environmentally unfriendly.</p>	
101.7	<p>Leakage reduction Along with educating customers water companies should ensure that the treated water they produce for drinking, which is what is supplied to all, is not lost through leaks or misuse. It remains a great concern to RCPC that more effort</p>	<p>We are aiming to reduce leakage by at least 50% by 2050 as required by regulatory guidance. We have tested a scenario with 62% leakage reduction by 2050. Aiming for higher reduction target carries additional deliverability risk and we need to balance the need to reduce demand with the need to maintain an</p>

Reference	Rowlands Castle Parish Council feedback	Southern Water response
	<p>is not being prioritised to reduce the loss of water through leakage. This water has already incurred treatment costs that are thus a waste of money when millions of litres are lost from supply pipes. By 2050 SW are only planning to have reduced leakage by half from the 92 million litres per day (Page 29 of SW WRMP summary) and approximately 46 million litres per day will still be lost. Southern Water needs to have a much more ambitious mains replacement programme and to fix leaks more quickly to stop this massive, costly, wastage of treated water.</p>	<p>uninterrupted supply under all but the most extreme drought conditions. We have considered this in setting our demand management targets.</p>
101.8	<p>Future water management</p> <p>Customer education</p> <p>It is important to stress to all water customers (household and industry) that climate change may bring long periods when there is no rain and groundwater supplies run low and rivers also see greatly reduced flows, with summer 2022 as an excellent example. Customers should be encouraged not to waste water and treat it as a precious commodity. The extended drought in California is an example of how all the technology in the world cannot stop areas running out of water if users are profligate with it. It should be made clear to customers that the use of temporary restrictions (Temporary Use Bans and Non-Essential Use Bans) in times of drought must form part of the plan to deal with increased demand. There is still a strong belief by many that water is a freely available resource that they don't need to protect and respect. The water companies must never indicate that drought restrictions on customers will be reduced because other measures have been brought in. Water companies changing their level of service so that restrictions like hose pipe bans occur less often for customers is not appropriate as it sends out completely the wrong message on the need for customers to save water. Sanctioning increased customer demand drives the volume of water that companies say they need in a drought and they use this to help justify expensive effluent recycling proposals. This is just wrong.</p>	<p>As part of our water efficiency programme, we will be running awareness campaigns to inform and help our customers become more efficient in their water use.</p> <p>While we plan to end our reliance on supply-side drought permits and orders by 2041 unless we are faced with a drought of greater than 1-in-500 year severity, we will continue to use TUBs and NEUBs in less severe droughts.</p>

Reference	Rowlands Castle Parish Council feedback	Southern Water response
101.9	<p>Increasing the number of reservoirs</p> <p>With a maritime climate forecast to produce wetter winters and dryer summers building more reservoirs/storage systems makes eminent sense. Reservoirs are not in themselves energy demanding over the long term and make for a sensible capital investment that can last for many decades and enhance their environment. They ensure that water that may otherwise be lost to sea can be held back. HTR and the current 3 reservoir proposed for other counties are all strongly supported and the latter should be brought forward from their planned start dates as a key objective. More schemes should be developed to store higher winter river flows in reservoirs, these could be quite small but yet make the difference between sustaining a useful water flow to customers or not. The failure to regularly invest in reservoirs of varying sizes is of great concern and RCPC wishes all water resource management plans to put such investment as a high priority after leakage reduction and customer education. Defra should be pushing the water companies hard in these respects. At the time of writing the winter lavant that flows through Rowlands Castle is passing millions of litres from the chalk aquifers out to sea with no possibility of capturing some of it for summer use. We would not let oil run away like that yet water is equally as precious.</p>	<p>We agree that storage reservoirs likely to be useful to help mitigate the most likely effects of climate change, mainly wetter milder winters and drier hotter summers by providing additional storage.</p> <p>We will continue to explore the potential for future reservoir options as part of our planning process. Our current plan proposes two new reservoirs (Havant Thicket Reservoir and the River Arun Offline Storage) and includes additional plans to expand Bewl Reservoir and combine both Bewl and Darwell reservoirs with water recycling schemes which would further augment storage.</p> <p>We will continue to explore potential reservoir options as part of our options appraisal process. We will also undertake further work to identify additional reservoir options as part of options appraisal process for future planning cycles.</p>
101.10	<p>Water transfer using pipelines/canals/rivers</p> <p>It is not clear how much energy will be required to move large quantities of water along pipelines or canals particularly if that involves pushing the water uphill at any stage and therefore there is some concern about the long-term costs involved. The other concern is that water shortages might occur widely if there are long dry periods across a large swathe of the country and so there may not be surplus water available to move about, thus the cost of developing this option needs careful consideration. Thus water transfer using various methods must be tied into increased storage capacity across the South-East in particular although it should also be looked at across the country as a whole. If storage using reservoirs or confined aquifers is increased then the building of interconnecting pipe work and use of canals and rivers makes sense.</p>	<p>We have taken carbon costs of our options into account when planning for the future and also plan to achieve net zero carbon status by 2030.</p> <p>We have worked together with five other water companies in the South East (Affinity Water, Portsmouth Water, SES Water, South East Water and Thames Water) to understand the frequency and severity of droughts that we might face in the future. This has been used to assess the volume of water that may be available from our existing and new sources under these drought conditions. All bulk transfer options in our plan have a clearly identified source (e.g. a reservoir) and the volume that may be available from the source during different drought conditions.</p>

Reference	Rowlands Castle Parish Council feedback	Southern Water response
101.11	<p>Water recycling</p> <p>The Council understands why the further processing and re-use of water that has already gone through the first stage of treatment from being effluent to something that can be discharged into the environment (river or sea) seems initially attractive but it has some major drawbacks. It is very energy and chemical intensive and that results in greatly increased costs for consumers at a time when energy is no longer cheap and in fact will continue to be much more expensive than in the past. The investment in the structures and technology associated with these schemes will need to be paid for and the operating costs will remain high throughout the life of the schemes, e.g. the requirement for the Havant recycling scheme to treat 3 Olympic-sized swimming pools worth of water every single day and pump it 40km even when the water is not required. The Council is very concerned that the drive to make profits for their owners is leading water companies to seek to invest in large amounts of infrastructure that will justify higher charges and thus greater profits. The current system of incentivisation by Government appears to lend itself to this approach by water companies. For the consumer the water from the HTR will taste different from what they are used to and this may put some people off drinking tap water and using bottled water instead (especially if they think about where it has come from), which would be a hugely retrograde step in terms of the use of plastic. The Council believes that more work needs to be done to drive down costs for this approach before it should be considered further but that the other options of leakage reduction, customer education and development of new reservoirs and storage capacity, including underground, must be taken forward first.</p> <p>Specifically, with respect to the Southern Water plan to put recycled water into HTR, RCPC does not support the proposal to use the reservoir as an environmental buffer lake. The Council is concerned about the risk of pollution associated with treatment failures, water quality issues including a great risk of algal blooms and adverse impacts on biodiversity, and at the potential loss or diminishment of</p>	<p>The alternative to water recycling, after all the other options of leakage reduction, customer education and development of new reservoirs, is desalination or long-distance transfer from other regions of the UK. Neither of these other solutions is deliverable in the near future.</p> <p>Groundwater is one of the sources the EA is looking to protect and reduce the abstraction during a drought. Consideration of a recharge scheme were considered, and a smaller one near Southampton is still proposed. However, the aquifer is unconfined in the Hampshire Winchester area and has a strong relationship with the river therefore were not able to progress this as a drought option.</p> <p>Our consideration of ASR schemes is further discussed in Annex 8 of this SoR.</p> <p>While the water from HWTWRP might taste slightly different from groundwater or spring water, it will meet drinking water standards and will be safe to drink.</p>

Reference	Rowlands Castle Parish Council feedback	Southern Water response
	<p>the benefits promised by Portsmouth Water to the local community when seeking support for the HTR project.</p>	

Reference	Rowlands Castle Parish Council feedback	Southern Water response
101.12	<p>Desalination</p> <p>Desalination is very energy intensive, has the potential to increase fossil fuel dependence, will increase greenhouse gas emissions and exacerbate climate change if renewable energy sources are not used for freshwater production. This process (and effluent recycling) is only used in countries where there is a sustained real shortage of water from other sources so that sea water needs to be converted to drinking water. It is not appropriate at all for this country where over the course of a year, increasing amounts of rain at times can supply all our needs if the rainwater is captured effectively. Desalination surface water intakes are a huge threat to marine life and the discharge of highly saline water will negatively affect all organisms in the water in that vicinity with a slow spread of that high saline effect over time.</p> <p>The Gateway Water Treatment Works in Beckton, east London, should take water from the Thames Estuary, treat it and make drinking water and was completed in 2010 to be used during dry weather events. However, Thames Water wanted to close the desalination plant as it was too costly to run. When it was needed during the drought conditions of last year only a small volume of output was available as the rest of the plant was supposedly out of action for maintenance.</p> <p>The Council believes that it was just too costly to run. According to Thames Water data, traditional large treatment plants in London cost approximately £45 to produce one million litres of water and this much cheaper than the cost of £660 per one million litres from the desalination plant. The energy usage per day appears to be 14MW to produce 100 megalitres and with the high cost of energy this is looks unsustainable.</p> <p>For all the stated reasons RCPC does not support the use of desalination as a means of addressing future water needs and considers the process a waste of customer money and damaging to the environment.</p>	<p>Energy intensive options like desalination and water recycling are options of last resort. We need to consider them in our future planning as we not only face restrictions in taking more water from rivers and groundwater in the future but are also required to limit the volume of water we already abstract. We are not planning to build any desalination plants in Hampshire. We do have some desalination options in Sussex and Kent but most of them occur later in the planning period. This gives us some time to consider any alternatives and to incorporate any technology improvements that may reduce the costs and/or the environmental impacts of these schemes.</p>

Reference	Rowlands Castle Parish Council feedback	Southern Water response
101.13	<p>Over-investment in infrastructure and technology</p> <p>The concern with regard to climate change and issues such as the potential for water shortages can influence thinking too much towards investing in new expensive solutions such as recycling and desalination, rather than reducing excessive and unnecessary use/loss and also retaining more of the water that falls freely from the sky for much of each year. Those new solutions will always demand high energy expenditure over tens of years with the resulting high costs to consumers and negative effects on the environment. It is essential that the lower-cost wins of reducing consumption, stopping unnecessary loss and retaining water in reservoirs and underground storage are prioritised over the pursuit of high cost solutions to water management.</p> <p>While it is understood that stopping leaks may be quite expensive the rapid development of new robotic technologies in identifying and repairing leaks will greatly assist in the process. The headlong pursuit of high-cost infrastructure options needs to be very carefully controlled; for all we know in future years with increased temperatures and a maritime climate we may get far more 'tropical' rain than we ever bargained for across a calendar year and then, apart from reservoirs and storage facilities, the high cost infrastructure improvements will be seen as white elephants on a grand scale that customers will continue to pay for unjustifiably just because they are company assets.</p>	<p>As mentioned earlier, our supply forecast has taken account of the likely impacts of climate change on water availability from our current and planned sources.</p>

Reference	Rowlands Castle Parish Council feedback	Southern Water response
101.14	<p>A final comment</p> <p>In 2018 Michael Gove, Environment Secretary at the time, berated water bosses in general saying: ‘Far too often, there is evidence that water companies have not been acting sufficiently in the public interest. Some companies have been playing the system for the benefit of wealthy managers and owners, at the expense of consumers and the environment. Some companies have not been as transparent as they should have been. They have shielded themselves from scrutiny, hidden behind complex financial structures, avoided paying taxes, rewarded the already well off, kept charges higher than they needed to be and allowed leaks, pollution and other failures to persist for far too long’. Water company charges (and therefore revenues) are determined by Ofwat, based on the costs presented by the companies, including an inflation-linked factor to ensure attractive returns to investors. There is thus a financial incentive to boost ‘investment’ and therefore returns to shareholders and owners. RCPC is greatly concerned that this attitude persists today and that WRMPs reflect the desire to make significant profits for owners and shareholders rather than provide a cost-effective solution for consumers who have to pay for all the developments and the environment. This must not be allowed to continue unchecked.</p>	<p>The comment is noted.</p> <p>Our WRMP is formally signed off by the Secretary of State for Defra after being formally scrutinised by the EA, Natural England and Ofwat.</p>

21. Feedback by Sevenoaks District Council and our response

Reference	Sevenoaks District Council feedback	Southern Water response
183.1	<p>Sevenoaks District is a predominantly rural district situated in West Kent. Southern Water is one of the wastewater providers for the district. Sevenoaks lies in an area of water stress and this will only become further exacerbated by climate change. It is acknowledged there is a pressing need to use water more sustainably and manage its demand.</p> <p>SDC is progressing with a new Local Plan which concluded its Regulation 18 consultation in January 2023. This version of the Local Plan focuses on making best and efficient use of land in towns and settlements across the District, reflecting the strategy for meeting development needs. This plan includes proposed policies that seek to efficiently address water management and encourage this in new developments. It is also acknowledged that successful infrastructure delivery is dependent on positive partnership working with infrastructure providers and developers, to ensure the services and facilities needed to support development are delivered in a timely manner.</p> <p>In support of this Regulation 18 consultation, an Infrastructure Delivery Plan (IDP) Update was collated. SDC engaged with infrastructure providers and public bodies to request an update on their any planned works, the existing infrastructure constraints and pinch points, areas of growth and identified need for Sevenoaks District. For the purposes of the Local Plan, the IDP will be treated as a 'live' document and will be reviewed as new evidence comes forward. We will continue to engage with infrastructure providers and public bodies to gather further information. This will be important as the new Local Plan progresses as sites are identified and more site-specific information becomes available. Future iterations of the IDP will be updated to reflect infrastructure requirements as we continue to engage with our infrastructure providers. The final version of the IDP will contain a schedule of</p>	<p>We welcome the response from the Council and support any initiative that will ensure more sustainable use of water resources and will continue to work with the Council through any relevant planning and development.</p> <p>We updated our growth forecast for the revised dWRMP24 to take account of latest updates to Local Area Plans.</p>

infrastructure provision, with costs, time horizons, standards of provision and capital programme information.

A second Regulation 18 consultation will be taking place in Autumn 2023 followed by a Regulation 19 consultation and Regulation 22 submission in Summer 2024. As the Local Plan progress, we will continue to engage with infrastructure providers and public bodies to ensure that new development does not have a negative impact on the water supply and existing households are not negatively affected. We will continue to work and engage with stakeholders to address these issues.

It is noted that the Draft Plan has forecasted population growth under a number of scenarios. Local Authority housing plans are included as a consideration in the forecasting exercise alongside the housing need numbers. As previously noted, we are in the process of preparing a new Local Plan which will include significant growth compared to the adopted Local Plan. We are currently providing approximately 330 dwellings a year. Our new Local Plan will need to provide up to 714 dwellings a year. This is more than double what we are currently providing. We would be grateful for this to be duly noted and where appropriate considered in the plan's projections.

183.2

To conclude, SDC is aware of the pressing demand on water resources and is supportive of measures to address these. We are progressing with our Local Plan and will continue to engage with infrastructure providers and public bodies to ensure sustainable growth and mitigate adverse infrastructure impacts for our existing and future residents.

We welcome the response from the Council and support any initiative that will ensure more sustainable use of water resources and will continue to work with the Council through any relevant planning and development.

22. Feedback by National Farmers Union and our response

Reference	National Farmers Union feedback	Southern Water response
286.1	<p>The National Farmers Union (NFU) welcomes the opportunity to provide a response to Southern Water’s Resources Management Plan consultation.</p> <p>The NFU represents 55,000 members across England and Wales. In addition, the NFU have 20,000 NFU Countryside members with an interest in farming and rural life. Farming has a key role to play across a number of platforms within the Southern Water catchment areas, namely;</p> <ul style="list-style-type: none"> • water management • food security • providing environmental benefits and a range of ecosystem services <p>The NFU Integrated Water Management Strategy states that farmers have much to offer in the development of an integrated water management strategy. Farming plays a key role in protecting and enhancing our water environment along with providing substantial environmental benefits and ecosystem services.</p> <p>A secure supply of water is essential for food security, supporting, horticulture, viticulture, crop and livestock production. The agriculture and horticulture sectors in the South East are extremely diverse, combining nationally significant fruit production with significant arable, livestock and ornamentals sectors. The water management needs from these sectors are equally diverse, although there are notable hotspots of water resource demand. Nearly all catchments in the region are identified as either over licensed or over abstracted, so there is often no new water available to enhance production outputs.</p> <p>To meet the demand required for food production, farms rely on a combination of water from rainfall, abstracted sources, and public water supplies. Irrigation demand is highly variable</p>	<p>We thank the NFU for its feedback. The comments are noted.</p>

Reference	National Farmers Union feedback	Southern Water response
	depending on seasonal peaks and weather conditions, whereas a constant supply is required for livestock production.	
286.2	<p>Agriculture is a modest user of the region's overall water resources, but our use of water for crop irrigation is relatively significant.</p> <p>The NFU asks that the Southern Water's WRMP looks to:</p> <ul style="list-style-type: none"> • work at a catchment level to fully understand the implications of water resources within those catchments and ensure solutions are focused and specific • provide a detailed understanding of the deficits that the agricultural sector face across the area • provide a timeline for working with the agricultural sector to understand the options and how they support the short, medium and long term risks of water shortages • provide assurance that regulation will work alongside the proposed options to secure water resources for a sustainable future for agriculture • ensure fair access, for agri-food abstractors, to the available water resources • ensure a food risk assessment is undertaken, reviewing the impact and implications of reduced water available to the agricultural sector • fully explore the financial implications (capital and operational costs) of the options available to the agricultural sector and to explore funding opportunities 	As part of our Catchment First initiative, we are working with farmers and landowners
286.3	Current plans focus on Public Water Supply (PWS) and work undertaken for the non-PWS sectors has been limited. This has limited the ability of the plan to fully understand the reflect these sectors and limits the multi sector approach that gives accurate predictions of water needs for the agriculture, food and drink sectors. Current planning has also missed the opportunity to fully consider wider sector issues, e.g., abstraction restrictions (HoF's, section 57's etc) and wider abstraction reform.	The comment is noted.
286.4	The NFU is keen to work closely with Southern Water on the evolving supply and demand pressures, specifically when this may result in the removal, adoption or change in the location or	We would welcome any opportunity to work with NFU.

Reference	National Farmers Union feedback	Southern Water response
	number of abstraction points across the companies' networks. Across demand management activities the importance of water for food production must be recognised, the recent Government Food Strategy highlighted the importance of domestic food production, maintaining our productive capacity and growing more food in this country. In the case of water supply disruptions, we are keen to collaborate on emergency plans for livestock to prevent animal welfare concern.	
286.5	The development of an enhanced network and associated storage options must ensure communication and compensation for agricultural businesses affected by infrastructure developments and we ask that all new sources include an allocation for food production. Whilst many of the proposals are focused upon PWS, these may also impact the agricultural sector, both directly and indirectly. Furthermore, we would need to understand the challenges (e.g. cost to extract) and opportunities (e.g. new abstraction benefits) of such proposals. The NFU would welcome the opportunity for wider sectors to explore the potential cobenefits at an early planning stage. In addition to this there are many opportunities on farm for the use of non-potable water and we would welcome collaboration to make use of these supplies.	The comment is noted.
286.6	We are always willing to work with Southern Water in order to develop catchment approaches and support farmers in their efforts to improve the water environment. However, these initiatives must be mindful that farmers run businesses and are under increasing pressures from a range of sources to deliver a variety of environmental objectives and this must be considered when planning catchment activities. We must also work together and with other organisations engaged at the catchment scale to reduce duplication of effort and improve the delivery on the ground. This will result in business benefits and cost savings for farm businesses and for Southern Water.	We agree with NFU that opportunities for mutually beneficial collaboration should be explored and we would be happy to work with NFU.
286.7	The NFU encourages a multi sector approach to water resources planning. We are aware that farming's relationship with the water sector is critical to building our water resilience. The Best Value Plan for Southern Water must look at a co-ordinated and collaborative approach to water resources	The comment is noted.

Reference	National Farmers Union feedback	Southern Water response
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	planning at a catchment scale in order to ensure the environment is protected and sectors/industries are sustainable	
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23. Feedback by Solent Protection Society Council and our response

Reference	Solent Protection Society Council feedback	Southern Water response
290.1	<p>The following comments by Solent Protection Society (SPS) on the Southern Water's Water Resources Management Plan question the assumption made by the company that its proposal for a new reverse osmosis water recycling plant at Havant will be approved.</p> <p>We believe this assumption to be premature and flawed and that this proposal could have a significant impact on the heavily protected coastal habitats of the Solent. We are also concerned that the environmental balance between the contents of the Havant Thicket Reservoir and the water of Langstone Harbour has not been fully assessed. Further consideration is required as part of a comprehensive Habitat Regulations Assessment before approval should be sought from the Secretary of State.</p>	<p>The HWTWRP will use global best practice with a multi-barrier approach and monitoring to ensure the water quality is exceptional when transferred to the reservoir. The water recycling plant will also monitor the quality of the treated effluent from Budd's Farm WTW and will shut down if any of the parameters are found to be untreatable. The recycled water will also have a lower nitrate level than the spring waters, due to the treatment at Budd's Farm WTW.</p> <p>The salinity in the treated effluent will be around 3g/l compared to 35g/l of seawater found in the Solent i.e around a tenth of the seawater.</p>

Reference	Solent Protection Society Council feedback	Southern Water response
290.3	<p>Environmental risks at the selected construction site</p> <p>The site selected for the new Water Recycling Plant is a former Havant Borough Council landfill site located beside Langstone Harbour, an environmentally sensitive site designated as an SSSI, SAC/SPA, Ramsar site, which forms part of the Solent (European) Marine Site (SEMS). The landfill site was still in regular use into the 1990s and is still actively venting. It is currently unclear how landfill gas is managed on the site – a rigorous Gas Management Plan will need to be developed. Surface water on site will need to be surveyed, modelled, and considered in detail to prevent contaminated leachate from entering the Hermitage Stream and Langstone Harbour.</p> <p>The overall condition of the coastal defences in this location is deteriorating and we are concerned that an historic landfill with defences at risk of failure is not a suitable site for the type of construction proposed. The recycling plant and high-lift pumping station would require a service shaft to be sunk into the landfill, connecting to three service tunnels bored into the landfill from three separate directions. One of these tunnels would run below the bed of the Hermitage Stream, carrying waste output from the Budds Farm wastewater treatment works into the new plant. There has been no detail published explaining how maintenance for these pipelines and tunnels will be carried out and the company's poor reputation for maintenance of its distributed infrastructure assets does not give us confidence that the plant and pipelines for the new plant would be kept in good order. The risk of contamination to the harbour waters remains to be fully assessed.</p> <p>The environmental impacts of the recycling plant on the contents of the Havant Thicket Reservoir, and the discharge of flow from the reservoir to Langstone Harbour have not been modelled to include all potential impacts on the coastal habitats. Portsmouth Water was granted planning permission for the reservoir on an understanding that it would contain solely spring water from the Havant and Bedhampton springs thus delivering a net gain benefit to the environment. A reduction in nitrate inputs to Langstone Harbour was promised as part of this new reservoir scheme based on the fact that</p>	<p>The landfill does provide additional complexity for the HWTWRP. This is being taken into account when considering the proposed construction techniques. This risk will be assessed as part of the planning process and information presented in the next public consultation on the scheme.</p> <p>The water recycling plant will not discharge into Langston Harbour, but return the flow to Budds Farm WTW and the existing system. Modelling of any changes to the long sea outfall (LSO) is ongoing and, if required, any mitigations of the impacts will be included and presented in the next public consultation on the scheme.</p> <p>As the water recycling plant will use the final treated effluent from Budds Farm WTW, the nitrate level will have been reduced by more than a factor of 10 below the Havant and Bedhampton springs. The introduction of recycled water into Havant Thicket Reservoir will support the reduction in nitrate levels as mentioned in the planning application for the reservoir.</p>

Reference**Solent Protection Society Council feedback****Southern Water response**

nitrate rich spring water which would have flowed into Langstone Harbour would instead be pumped up to the Havant Thicket Reservoir where the higher level of nitrates would naturally break down. This benefit would be significantly reduced under the new proposal as the proposed daily topping-up of the reservoir with recycled effluent would result in greater volumes of spring water being directly released into Langstone Harbour.

Reference	Solent Protection Society Council feedback	Southern Water response
290.4	<p>Concerns regarding reverse osmosis technology at this site</p> <p>Effluent recycling using reverse osmosis is an energy intensive process which would produce brine as a by-product and the proposal shows such brine being discharged via a long sea outfall into the Solent. The Solent waters into which this brine would circulate are classified by Defra as important bivalve mollusc harvesting and shellfish waters. While the recycling of effluent via reverse osmosis is a process new to the UK, similar brine is also the by-product of desalination and the effects of discharging it into the marine environment have been widely studied. The inherent salinity and temperature of this effluent can have detrimental effects on the marine environment. Estuarine species are often able to adapt to a wide range of salinities, whereas many marine species are limited in their narrow range of physiological tolerance. Salinities at the margins of this tolerance range have the potential to alter species behaviour, limit reproduction, and reduce fitness for survival in their environment. Brine underflows also deplete concentrations of dissolved oxygen in the receiving water, which can cause anoxic condition for benthic organisms, possibly translating into ecological repercussions throughout the food chain. While the brine generated by the water recycling plant would be less intense than that assessed for the 2021 Southern Water desalination plant proposal at Ashlett Creek, the potential impact on the waters of the Solent cannot be ignored.</p> <p>The risk to the water bodies from inadequate or incomplete levels of treatment While we accept that the proposed water recycling plant would include some element of chemical water treatment in addition to filtration, there is a risk that the treated wastewater could do more harm than good, contaminating the reservoir with pathogens or altering the physiochemical properties of the reservoir through accumulation of chemical or biological contaminants (for example pesticides and natural hormones, as well as endocrine disrupting chemicals). Concerns about the effectiveness of nutrient treatment/removal from wastewater raise the risk that, should the treatment of effluent be insufficient, increased nutrient loading will affect the</p>	<p>There is a significant difference in reverse osmosis used for seawater desalination and water recycling. The key difference is that the starting ‘treated wastewater’ has a salt level of about 1.5g/l, whereas seawater is around 35g/l. Both processes roughly double the salt concentration in the waste stream, so 70g/l vs 3g/l. The waste stream under normal (minimum) flow is further diluted by the remaining treated wastewater from Budds Farm WTW before it enters the Solent. The impact will be considered as part of the EIA and presented in the public consultation.</p> <p>The level of treatment provided by a FAT is aimed at reducing pesticides and natural hormones, endocrine disrupting chemicals and other contaminants of emerging concern, both from the UK and the US, to levels below the spring waters being transferred to Havant Thicket Reservoir. This will also be covered in the public consultation.</p> <p>Other strategic options have been considered. However, due to the level of resilience required and the need to protect the chalk streams and groundwater in Hampshire, strategic options like water recycling and long-distance transfers are required. Softer engineering solution provide benefit in less severe droughts, but not in droughts that last over multiple years.</p>

Reference	Solent Protection Society Council feedback	Southern Water response
	<p>chemical balance of the reservoir water and may cause eutrophic conditions both in the reservoir and in Langstone Harbour.</p> <p>Changes to Southern Water strategic delivery schedule warrants the reassessment of alternative sources SPS appreciates that alternative strategic solutions must be explored in further detail in order to cater for the predicted shortfall in drinking water supplies. We also understand that climate change will bring wetter winters and drier summers. Investing in natural solutions that capture and store winter rain and ensure aquifers are sufficiently supplied during the summer, provide a wealth of ecosystem services, reduce fluvial flooding risk, and create vital wetland habitats to improve biodiversity. Additional winter storage reservoirs would provide a valuable addition to the aquifer recharge problem faced by water companies. Use of water transfer from other regions should once again be reviewed. For example, the transfer of water from Wessex Water and Bristol Water were discounted by Southern Water during their 2021 'Water for Life' consultation, simply due to the relative schedule dates of these regional programmes. With the decision to drop the Ashlett Creek desalination project following the concerns raised during that previous consultation, Southern Water's own strategic schedule dates have now slipped and the availability of water transfer from the west of England reservoir projects should be reassessed.</p>	

Reference	Solent Protection Society Council feedback	Southern Water response
290.5	<p>In summary</p> <p>With appropriate research, we believe that there would be other environmentally sound and cost effective natural alternatives to the type of water recycling proposed by Southern Water. Such an approach would safeguard the delicate environmental balance within the Solent, its harbours and its estuaries, and would have the wholehearted support of the Solent Protection Society.</p> <p>Solent Protection Society does not support the Hampshire Water Transfer and Water Recycling Plant component of Southern Water's 'Water Resources Management Plan'.</p>	<p>Without the augmentation of Havant Thicket Reservoir with recycled water, the direct transfer element of HWTWRP does not work and would deplete the reservoir prematurely before a severe or extreme drought, resulting in continued reliance on drought permits and orders under such conditions.</p>

24. Feedback by Southbourne Parish Council and our response

Ref no.	Southbourne Parish Council feedback	Southern Water response
320.1	<p>Please find below, consultation response from Southbourne (West Sussex) Parish Council:</p> <p>Bearing in mind that 95% of household water consumption is transferred to the sewer system, what consideration is being given to the effect of the T100 reduction of per capita consumption to 110 litres/per person/ day and later to 100 litres/person/ day.</p> <p>The sewer gradients were designed for a norm of 200 litres/person/day. Simple hydro-dynamic principles indicate that the present sewerage network system, will experience significantly increased blockages resulting from the doubling of solid content of the effluent.</p>	<p>We have developed our DWMP alongside our WRMP. We have therefore taken account of consumption forecasts.</p> <p>The flows requiring treatment at our WTW as well as the flows in our sewers by will reduce as a result of reducing domestic water consumption. However, we will monitor this carefully to ensure that reducing flow in sewers does not cause an increase in the risk of sewer blockages. A sufficient base flow is needed to flush solids through the system and ensure the sewers remain self-cleansing as originally designed. We are installing over 20,000 digital water level monitors in our sewer networks during the current investment period to enable us to monitor the performance of sewers and protect against pollution and flooding incident.</p> <p>We would refer the Council to our draft DWMP where we have discussed this issue in more detail.</p>

25. Feedback by Sussex Wildlife Trust and our response

Reference	Sussex Wildlife Trust feedback	Southern Water response
270.1	<p>Environmental Ambition The resilience of our natural environment and our water sector is fundamentally interconnected. Yet our freshwater and coastal environment is suffering – fragmented, polluted and degraded, to the detriment of our communities, our economy, and our wildlife. SWT believes that the priority for all water company plans is to reduce the need for water resources as much as possible, and then secure those resources in the best way possible. This must be done in a way that meets the needs of the environment first, before considering how additional needs from businesses and households are met.</p> <p>Water company plans must drive environmental improvements with the aim to fully restore past damage, including over abstraction. It is important for customers and other water users to understand that environmental improvement is generally trying to get us back to what should be there already, not going above or beyond. We therefore question wording such as ‘we will need to leave more water in the environment to keep it healthy’ (page 4, non-technical summary). Our wetland environments are not currently healthy, and more water is needed to restore them and prevent further degradation.</p> <p>Overall, we are pleased to see that the WRMP reported pathway includes high environmental improvement and high climate change scenarios. SWT is supportive of reduction in abstraction from chalk groundwater and the WRMP including plans to meet environmental flow targets. However, it is not clear whether these plans account for the EA’s enhanced scenario targets. If not, this should be</p>	<p>The Environmental Destination scenarios we have considered for our adaptive plan do include the EA Enhanced Scenario, though as the ‘High’, ‘Medium’ and ‘Low’ scenarios were based on volume of abstraction reduction rather than policy, the specific branches to which the Enhanced Scenario applies varies by WRZ.</p> <p>Our WINEP includes a combination of investigations and options appraisal following an agreed timetable with the EA. We do expect there to be abstraction reductions as a result of these investigations and have included these as part of our Environmental Ambition scenarios. The point of the investigations is to derive a robust evidence base to make informed decisions about the degree of abstraction reductions required in addition to any further mitigation such as habitat enhancement that will restore and enhance the environment.</p> <p>We have provided additional narrative around our Environmental Destination scenarios in our revised dWRMP24 to make it clearer what each represents and how we have included both licence reductions and other catchment solutions into our strategy.</p> <p>We will also improve our adaptive Monitoring Plan to better quantify how we will monitor population growth. Our baseline growth forecast is based on Local Area Plans. However, we have also included other growth projections, including the ones by ONS. If we have evidence that population growth is more in line with the ONS projections then we will switch to the adaptive pathway that is based on ONS population data. Our Adaptive Monitoring Plan (Annex 11 of our revised dWRMP24) provides further detail on this.</p>

Reference	Sussex Wildlife Trust feedback	Southern Water response
	<p>addressed. The low environmental improvement scenario should be the minimum expected by regulators, with the medium and high going above this. SWT also strongly supports a WINEP programme that includes action on abstraction reduction, rather than primarily investigations. We would also like to see Southern Water stop using drought orders and drought permits as soon as possible and support 2040 at the latest date this will happen.</p> <p>One concern with the growth pathways is the population decision point in 2030. It is not clear what evidence this decision will be based on. The ONS population growth figures appear to reduce at each publication and housing delivery in Sussex has consistently been lower than what has been planned for in Local Plans. This uncertainty needs to be accounted for when considering the growth pathway options in 2030</p>	

Reference	Sussex Wildlife Trust feedback	Southern Water response
270.2	<p>Resilience through nature-based solutions (NbS)</p> <p>SWT strongly supports proactive use of catchment and nature-based solutions to restore the environment, improve water quality and lower operational carbon emissions. The WRMP states that the aim is to take a twin-track approach using traditional engineering schemes where needed to achieve compliance, with catchment and nature-based solutions being used to reduce reliance on this. We strongly support reducing reliance on engineering schemes and would like to understand more clearly what compliance issues are driving engineering over NbS.</p> <p>SWT is disappointed by the lack of catchment-based schemes included in the Water Resources South East draft Best Value Plan (BVP). We encourage Southern Water to work within WRSE to increase commitment and confidence in catchment and nature-based solutions. Whilst Southern Water's WRMP should be aligned with the regional BVP, we would not want WRSE to hold back Southern Water's ambition on the Nature First programme. Additionally, Southern Water's WRMP needs to be seen to work holistically with the DWMP and Southern Water's requirements around water treatment. Although regulatory bodies keep water resources and wastewater separate, they are fundamentally interlinked and should be planned for together.</p>	<p>The comment is noted. Our WINEP covers more of our catchment based schemes, including our plans to work at a catchment scale to maximise benefits, working with Catchment Partnerships.</p>

Reference	Sussex Wildlife Trust feedback	Southern Water response
270.3	<p>Demand reduction</p> <p>SWT is very supportive of Southern Water's industry-leading position on demand reduction. Compared to other water companies in the South East, Southern Water is leading the way on leakage and water efficiency. SWT is pleased to see the WRMP meeting the government's target of 110 litres of water per person per day by 2050, and strongly supports the more ambitious target of 100 litres per day by 2040. We also encourage Southern Water to commit to its higher target of 62% leakage reduction by 2050.</p> <p>That said, Blueprint recommends that WRMPs aim to reduce absolute Distribution Input by at least 15% by 2040. For the preferred programme under the Normal Year Annual Average scenario and taking the baseline of 2022-23, the plan appears to result in a reduction in DI of around 12.5% by 2040, but after this point, total DI creeps up again with a figure for 2070, which is only 6% less than the baseline. This is concerning.</p> <p>We note that between 2023 and 2025, Southern Water aims to increase the number of homes with meters from 88% to 92% and start fitting smart meters. The data from the technical appendices seems to indicate that metering stops in 2030 at 1,950,000 meters. We assume this is because 100% of households will then be metered, but this should be made clear.</p> <p>SWT supports the use of tariffs to incentivise water efficiency and we strongly encourage the water industry to lobby government and policy makers to adopt more water efficient policies and standards. We would like to see government interventions adopted sooner wherever possible. Any extra demand reductions resulting from earlier implementation of national policy should be</p>	<p>We are aiming to achieve a PCC of 110l/h/d by 2045 under dry year conditions. This equates to a normal year PCC of 100l/h/d by 2045. We have also tested a scenario of achieving a PCC of 98l/h/d under dry year conditions.</p> <p>We also plan to reduce non-household demand by 12% by 2037-38 compared to 2019-20 levels and leakage by 50% by 2050. We have also tested reducing leakage by 62% by 2050.</p> <p>The success of demand management initiatives depends on behaviour change in relation to water use. Aiming for higher targets carries additional deliverability risk and we need to balance the need to reduce demand with the need to maintain uninterrupted supply in all but the most extreme conditions. We have considered this in setting our demand management targets.</p> <p>Our demand management measures will lead to a reduction in demand in the short to medium term despite growth. However, once an optimum level of PCC, non-household demand and leakage reduction has been achieved, the amount of water we need to supply will ultimately increase with increase in population.</p>

Reference	Sussex Wildlife Trust feedback	Southern Water response
	<p>additional to the WRMPs committed reductions and not used to offset any underperformance on demand from companies.</p> <p>Any demand management options must be realistic and properly resourced. SWT agrees that close monitoring of demand reduction is key. The WRMP states that if monitoring shows that demand reduction is less than planned, then more infrastructure/supply side options may be needed. However, SWT would like to see monitoring first trigger more investment into demand reduction options, rather than straight to increasing supply.</p> <p>We note that for the North Sussex Supply Zone, Southern Water believes that a significant proportion of household growth has already been accounted for in WRMP19. However, WRMP24 states that some demand targets for WRMP19 were not met, primarily due to changes in working practices and water usage due to the pandemic. The WRMP24 needs to explain how this under delivery has been accounted for in terms of the Water Neutrality Mitigation Scheme for the North Sussex Supply Zone. We do encourage Southern Water to share learnings on water neutrality with WRSE and throughout the water industry. SWT would like to see water neutrality as the norm when it comes to planning for growth.</p> <p>The WRMP does not contain a great deal of information on Southern Water's work to improve water efficiency within the Non-public Water Supply. It appears that non-household consumption is projected in the WRMP to go up by 13% between 2019 and 2070. This is concerning, and we would like to see Southern Water work more closely with businesses to address this issue.</p>	

Reference	Sussex Wildlife Trust feedback	Southern Water response
270.4	<p>Supply options</p> <p>Whilst the absolute priority should be ambitious demand-side measures, SWT acknowledges that there will still be a need for new schemes to meet the supply shortfall. SWT supports the use of supply side options that are the least environmentally harmful and, ideally, where benefits to the environment can be delivered.</p> <p>Unfortunately, the high-level nature of the WRMP and numerous technical documents have made it difficult to determine if this is the case. For example, the strategic environmental statement includes biodiversity net gain, natural capital and carbon accounting as criteria for assessing the best value options. However, it is not clear what weight these metrics have had when it came to choosing options or what the chosen options will deliver for these issues. It is also not clear what the overall ambition for BNG is. SWT would strongly support a commitment delivering at least 20% BNG for new infrastructure, with particular focus on supporting emerging Local Nature Recovery Strategies.</p> <p>The biodiversity net gain assessments included in WRSE's BVP demonstrated that reservoirs have potential to deliver gains, along with natural capital enhancements. In general, reservoirs are a lower carbon option compared with desalination and water recycling and can provide multiple benefits for people and wildlife. In contrast, desalination is energy intensive, costly to operate and likely to have significant environmental impacts on the marine environment. The most significant of these impacts, is the release of brine effluent into the coastal environment and the consequent acute and chronic toxic effects on marine organisms. SWT also has concerns about potential dilution mechanisms used for brine effluent, with regards</p>	<p>Our revised dWRMP24 provides more clarity around the use of Best Value metrics in developing the Best Value Plan.</p> <p>Desalination on the Sussex Coast was part of our dWRMP24. However, it has been removed from our revised dWRMP24 as we could not find a suitable alternative location for it once our originally identified location became unavailable.</p>

Reference	Sussex Wildlife Trust feedback	Southern Water response
	<p>to the source of dilution solutions and the impacts of these solutions on water quality when released. We also note the potentially destructive impacts of the suction pipes delivering water to the proposed desalination plants, which have been estimated to kill billions of fish annually and are a particular risk for larval stages of aquatic fauna. SWT is therefore very concerned that a desalination option is being progressed before a reservoir for West Sussex.</p> <p>That said, the WRMP seems confused on the prospect for desalination on the Sussex coast. The WRSE BVP is clear that a desalination plant within the first 10 years of the plan is a must and is critical to the delivery of the BVP. In contrast, the WRMP states that Southern Water may need to introduce desalination near the tidal River Arun, and that the coastal desalination scheme has proved to be undeliverable at the proposed location of Shoreham Harbour so an alternative is needed.</p> <p>SWT is extremely concerned about the feasibility of Southern Water progressing desalination by March 2027. It is clear that further work is needed to understand the impact of desalination and SWT is very dubious that that a scheme could be progressed without significant negative impacts on the environment. In contrast to Southern Water, South East Water have partially constrained the delivery of its proposed desalination project to later in the plan to allow time for investigation and technological advances due to the environmental risk and high operational costs.</p> <p>SWT encourages strong cross-company collaboration on investigating how to avoid and mitigate any harms from desalination, for example through UKWIR or shared learning via the Water</p>	

Reference	Sussex Wildlife Trust feedback	Southern Water response
	<p>Resources Senior Steering Group. Overall, we do not believe that the knowledge or evidence is sufficient to demonstrate that a Sussex desalination scheme is feasible or deliverable within the first 10 years of the plan and this concerns us.</p>	

26. Feedback by Test and Itchen Association and our response

Ref no.	Test and Itchen Association feedback	Southern Water response
232.1	(i) Protecting the environment. We are pleased to see that the DWRMP 2024 ('the WRMP') has a strong focus on protecting and improving the water environment, and in particular chalk streams including the Test and Itchen (T&I).	The comment is noted and we are pleased that the Test and Itchen Association is supportive of this aspect of our plan.
232.2	(ii) Water quality – the missing dimension. The WRMP2024 focuses entirely on the water balance between current and future water demand and supply. It totally ignores water quality as a key factor in water resources planning and management. For example, in parts of Norfolk additional water supplies are required to dilute groundwater which is loaded with excessive levels of nitrates to make it suitable to drink. Excessive abstractions from rivers and groundwater reduces the flow in the river, thus increasing the concentration of pollutants from farms, sewage works, septic tanks, etc. Higher concentrations of pollution endanger the aquatic environment which Southern Water professes to want to protect. You can't have 'Water for Life' if you are polluting and killing the aquatic life in the river. The WRMP2024 must be revised to discuss and take account of water quality.	The comment is noted. Our water quality plans are covered by our WINEP. Outputs from WINEP investigations support the WRMP when assessing supply and demand challenges.
232.3	(iii) Compliance with national guidelines. We are pleased to see that the WRMP complies with the National Framework and Water Resource Planning Guidelines which recognise the need to secure water supplies and to add wider environmental and societal benefit.	The comment is noted.
232.4	(iv) Regional collaboration. We are pleased to see that the WRMP has been prepared in close collaboration with the Water Resources South East group ('the WRSE'). We wish to note that this regional cooperation and organisation is long overdue; water resources do not operate along private water company boundaries therefore collaboration between water companies is essential.	The comment is noted. We agree that a regional approach to water resources planning regardless of water company boundaries represents a more holistic approach
232.5	(v) Collaboration with Portsmouth Water. It is good to see the significantly increased level of collaboration with Portsmouth Water. This can only be beneficial for both Southern Water	The comment is noted. We agree that increased collaboration between water companies is good for customers and the environment.

Ref no.	Test and Itchen Association feedback	Southern Water response
	and Portsmouth Water customers and our respective water environments.	
232.6	(vi) Building blocks for planning. We concur with the proposed four pillars: (a) Efficient use of water and minimal wastage across society, (b) New water sources that provide resilient and sustainable supplies, (c) A network that can move water around the region, (d) Catchment and nature-based solutions that improve the environment we rely upon.	The comment is noted. These remain the key planning principals for our revised dWRMP24.
232.7	(vii) New resources and approaches. The recognition of the need to develop new resources, develop plans for transfer of water between water companies, provide greater network flexibility and enhance the approach to improving the catchment environment is welcomed.	The comment is noted and we are pleased that the Test and Itchen Association is supportive of this aspect of our plan.
232.8	(viii) Planning approach. Overall, the approach to the planning process appears rigorous and robust, with all relevant factors considered. The development and testing of different possible options and solutions to provide a band for adaptive planning appears appropriate. The eight scheme types: Scheme types: (i) Demand management – smart metering; (ii) Demand management – Leakage detection; (iii) Water recycling plants; (iv) Desalination plants; (v) Imports and inter-zonal transfers; (vi) Storage; (vii) Groundwater abstraction; and (viii) Catchment management and nature-based solutions cover the main options for securing our water future.	The comment is noted and we are pleased that the Test and Itchen Association is supportive of this aspect of our plan.
232.9	(ix) Changed sources to meet future water demands. We note the forecast made in the 2019 WRMP of an overall water deficit in the Western Area of around 192Ml/d during peak periods up to 2029-30 and the intention in that Plan to develop additional water resources from a desalination plant located on the Solent. It is noted that after a period of consultation the desalination plant was dropped due to environmental concerns, as was an initial proposal for an indirect water recycling scheme using the lower Itchen as a buffer due to environmental concerns. This has resulted in the proposed Hampshire Water Transfer and Water Recycling Project (HWTWRP) based on recycling wastewater from Budd's Farm wastewater treatment works (WWTW) and using Havant Thicket reservoir (HTR) as a buffer prior to transfer of water	We have further refined HTWWRP since the dWRMP24 but the principle remains the same. The changes are discussed in our revised dWRMP24.

Ref no.	Test and Itchen Association feedback	Southern Water response
	<p>from HTR to Otterbourne water treatment works (WTW). It is noted that the HWTWRP is 'a drought resilience scheme' with a sweetening flow of 7.5MI/d and a drought flow of up to 90MI/d.</p>	
233	<p>(x) Selection of Option B.5 (HWTWRP). We understand that the process for selecting the HWTWRP (Option B4) was discussed and consulted on as part of the RAPID process as part of several Strategic Resource Options (SROs). The back-up option (Option B.5) with an Environmental Buffer Lake at Otterbourne would seem to come a poor second to Option B4, given that HTR is already under construction and that finding a site and obtaining planning permission for a new buffer lake at or near Otterbourne would be difficult, if not impossible. The submission to the Secretary of State to follow the Development Consent Order (DCO) process seems logical given the number of local planning bodies (8 No.) involved in the process.</p>	<p>The comment is noted. Option B4 is retained as an alternative to HWTWRP in the revised dWRMP24. We will however be progressing HWTWRP as our preferred option.</p>
233.1	<p>(xi) Reducing demand. The focus on reducing consumption by household customers to less than 100l/p/d and leakage reduction are welcomed, though the target of a minimum reduction in leakage by 2050 is far too slow in relation to the T&I catchment. The WRMP should recognize the need for special measures for the chalk streams, especially the T&I. A set of criteria should be developed to prioritise works in water systems supplied from rivers and groundwater such as the T&I which are under threat from over-abstraction, particularly in drought periods. A 'one size fits all' approach is not considered acceptable in relation to these nationally and internationally recognized chalk streams and aquifers</p>	<p>We are prioritising areas for introduction of demand reduction measures (such as introduction of smart meters) that are under greater stress. These include parts of Hampshire and Sussex. The aim is to lower demand in these areas ahead of other areas while achieving our company wide target.</p> <p>We are aiming to achieve 50% leakage reduction by 2050 and have tested a scenario to reduce leakage by 62%. However, aiming for higher reduction targets increases the deliverability risk and we need to balance the need to reduce demand with the need to maintain uninterrupted supply under all but the most extreme conditions. We have considered this in setting our leakage reduction target.</p>
233.2	<p>(xii) Improved granular analysis. The division of the former Hampshire South Water Resources Zone (WRZ) into four water resources zones (HWZ, HRZ, HSE, and HSW) is merited and allows for a more granular analysis of the conditions relevant to the Test and Itchen. It is noted that there is no map in the WRMP showing the location of these water resources zones relative to the T&I. This should be provided</p>	<p>The comment is noted. We will consider it for our revised dWRMP24.</p>

Ref no.	Test and Itchen Association feedback	Southern Water response
233.3	(xiii) Time frame. The time frame of the WRMP (50 years, 2020-2070) is appropriate given the need to plan ahead and adapt these plans as necessary over time.	The comment is noted. The planning period in our plan is 2025-75.
233.4	(xiv) WRMP2024 Objective. The objective of the WRMP is appropriate and accepted – ‘The primary objective of our WRMP is to ensure that there is always enough water available to meet anticipated demand in our area of supply, regardless of weather conditions. Particular focus has been placed on ‘dry’ and ‘very dry’ years, when the average rainfall is much lower than the long-term average.’	The comment is noted.
233.5	(xv) Planning return period. The Water Resources Planning Guidelines (WRPG) requires water companies to plan for maintaining supplies with a return period of 1-in-500-year without having to resort to the use of drought permits and orders to secure supplies. We considered this an appropriate return period to provide adequate safeguards for chalk streams such as the T&I.	Our strategy aims to cease reliance on drought permits and orders to maintain supply by 2041. This is closely linked to the proposed timeline for achieving 1-in-500 year drought resilience. We have also explored sensitivity scenarios that consider both earlier and later timescales for achieving 1-in-500 year resilience and cessation of use of drought permits and orders.
233.6	(xvi) Compliance with guidelines/frameworks. The WRMP appears to have followed the main guidelines/frameworks relevant to water resources planning (The Water Resource Management Plan (England) Direction 2022, issued in April 2022; Government’s 25 Year Environment Plan (HM Government, 2018), The National Framework (Environment Agency, 2020), etc	The comment is noted
233.7	(xvii) Approach. Southern Water’s approach – ‘Our strategy aims to create a resilient supply system in the face of challenges posed by population growth, climate change and the need to protect and improve the environment’ – seems appropriate. Climate change resilience will be a fundamental requirement for water supply systems going forward.	The comment is noted.
233.8	(xviii) WRMP2019 update. Table 3.1 detailing the status of WRMP2019 preferred options is helpful in understanding the current status and changes since then. In WRMP2019 it was intended that there would be an additional import of 21 Ml/d from HRT. It is recognised that now that the desalination plant has not been accepted the additional water required is planned to come from the Hampshire Water Transfer and Water Recycling Project (HWTWRP).	The comment is noted.

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233.9	<p>(xix) Catchment management. Poor livestock and land management can lead to high levels of nutrients (phosphates, nitrates), pesticides and sediment entering rivers and groundwater. In the WRMP there is insufficient attention paid to, and detail of, proposed catchment management activities. In other countries (e.g. the USA, Australia, Europe2) effective engagement with farmers on catchment management has proved effective in reducing nitrate and phosphate applications and levels in surface runoff and groundwater, and reduced levels of sediment ingress into rivers. Again, priority has to be given to sensitive ecosystems such as the Test and Itchen where pollution from excessive nutrients (particularly phosphates) is killing the invertebrate population and excessive sedimentation from surface runoff is smothering trout and salmon spawning grounds. Southern Water need to put more teeth into their statement 'Catchment First is our commitment to put the well-being of the environment at the centre of the decisions we make and the services we deliver. It represents a shift in focus from relying on traditional engineering solutions, to working collaboratively with partners to create long-term sustainable improvements to the environment on which our business and customers depend' (Section 5.3.6 Catchment First, WRMP2024, Southern Water).</p>	<p>The work we are undertaking as part of our Catchment First initiative is linked to our WINEP commitments. We work closely with the agricultural sector to reduce the risks to our drinking water supplies from nitrates and pesticides.</p>
234	<p>(xx) Nitrate infrastructure plans and groundwater nitrate reduction plans. The WRMP details the development of nitrate infrastructure developments at Twyford and Romsey and a programme for reduction of nitrates in groundwater . However, it makes no mention of the serious damage caused to chalk stream ecosystems by phosphates. Despite many years of objections Southern Water continue to pump excessive amounts of nitrates and phosphates (>5 mg/l) into our chalk aquifers at Alresford and Winchester WWTW adding several tonnes per year of these pollutants to the groundwater. This is a time bomb, and as has been seen with the problems caused by excessive nitrate application post-WWII this practice will come back to haunt us and our chalk streams. Discharge consents into chalk aquifers from wastewater treatment plants need to be tightened up by the Environment Agency and phosphate strippers installed in areas of high risk</p>	<p>The comment is noted.</p>

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	<p>such as in the Upper Itchen at Alresford. It is not acceptable that Southern Water are discharging wastewater with these levels on nutrients into the chalk aquifers that feed our chalk rivers. This is particularly the case for the Itchen which is designated as a Special Area of Conservation (SAC).</p>	
234.1	<p>(xxi) Drought permits and orders. We note that Southern Water are committed to delivering their water services without the need for drought permits and orders after 2040. We understand that reducing wastage and finding additional sources of water can take time, but we need this target date to be brought forward. We believe that far more can be done by Southern Water and others (to include the Environment Agency, local councils and NGOs) to reduce water usage as we enter into a drought period. In 2022 we suffered a drought in Hampshire. River flows levels on the Test and Itchen were dangerously low, increasing the concentration levels of pollutants and starving the fish of oxygen. It was left to the media to highlight the crisis in July despite the fact that, as the slide below from Southern Water shows, Southern Water were aware that a drought was imminent. River flows in chalk streams during the summer and autumn are directly linked to groundwater flows which in turn are directly linked to rainfall occurring in the previous autumn and winter. Southern Water knew this from the low rainfall in 2021 and their tracking of groundwater, yet did little to advise the general public before July 2022. A temporary use ban was not instigated until 5th August when we were well into the drought. This is just not acceptable, and significant attention needs to be paid to advancing the drought warning to the general public to conserve water, if necessary, applying restrictions to specific catchments/supply areas earlier than others, even if it might upset some customers.</p>	<p>We have provided more detail on our use of drought restrictions and drought permits and orders to improve supplies in annex 26 of our rdWRMP24. Our revised dWRMP24 also includes a section on the lessons we learned from the 2022 drought including a review of our water efficiency messaging and the effectiveness of water restrictions.</p>

Ref no.	Test and Itchen Association feedback	Southern Water response
234.2	<p>(xxii) Hampshire Water Transfer and Water Recycling Project (HWTWRP). This project has been ‘added on’ to the HTR project following the dismissal of the desalination proposal in 2021. The change in the proposed functioning of the HTR has raised serious objections amongst local residents in Havant, who are suspicious of Southern Water’s motives. This suspicion result for a serious lack of trust in the company following its recent prosecution and £90 million fine for dumping untreated wastewater from 17 water treatment plants along the South Coast. It must be recognised that this lack of trust in Southern Water is a major hindrance to the much-needed recycling project. Southern Water need to consider alternative approaches to their presentation of this project, for example bringing in independent consultants and (university?) professionals to present the project and to argue the case for recycling. At the recent meeting held on 17th February 2023 by Havant Borough Council it was clear that Havant residents were not listening to the case presented by Southern Water, or to Southern Water’s answers to their questions.</p> <p>It is not clear if there are any viable alternatives for bringing the required additional supplies into the Itchen basin to substitute for abstractions from the Test and Itchen rivers and groundwater. Gaining acceptance by the people and local representatives in Havant to the recycling project is thus a priority.</p>	<p>We are working hard to reduce the occurrences of unplanned wastewater discharges during periods of high rainfall and build trust with our customers.</p> <p>We will be carrying our further public consultations on HWTWRP where we will share the results of our investigations and our plan going forward.</p>
234.3	<p>(xxiii) Customer awareness. In sensitive areas such as the T&I catchments, but also the Meon and other chalk stream catchments, Southern Water needs to engage more with government agencies such as the Environment Agency and local councils (at all levels – county, ward and parish) and NGOs to gain their assistance in reducing water usage, especially during droughts. This is not a single agency issue, it is a societal issue and needs to be addressed by all relevant government agencies, as well as the NGOs. Given the current low level of trust in Southern Water gaining the assistance of other agencies in water awareness is essential. With population growth and climate change the general public needs a step change in their understanding and thinking about water.</p>	<p>We agree that a collaborative approach between the government, water companies and other NGOs is needed to promote water efficiency. We plan to work in partnership with other bodies as we aim to reduce water used in households and non-households over time.</p>

Ref no.	Test and Itchen Association feedback	Southern Water response
234.4	<p>(xxiv) PWC Source A water source on the Lower Itchen. It is not clear what is happening to the water abstractions at the PWC Source A site located on the lower Itchen and owned and managed by Portsmouth Water (Source J in Portsmouth Water's WRMP2024). It is incongruous that water has and is being transferred from a water scarce catchment (the Itchen) via PWC Source A across two river catchments (the Hamble and Meon) to Gosport when Portsmouth Water (PW) has, until recently, no water scarcity. In a logical water resources plan this facility would be transferred to Southern Water to supply its Southampton East customers.</p> <p>There is insufficient detail in the WRMP on what is happening at PWC Source A. PW state in Section 1.6.3 Sharing water with Southern Water of their draft 2024 WRMP7 that they are already supplying 15 MI/d to Southern Water, with an additional 9 ML/d coming on stream in 2024 if borehole tests are satisfactory. However, Southern Water's WRMP doesn't appear to mention this existing 15 MI/day and show in their Excel table in the Addendum sent on 17th February 2023 that 21 ML/d will become available from PWC Source A to Otterbourne in 2029/30, with a further 24 MI/d from GM in the same year (see table below from Southern Water Excel sheet). So the question is - is the planned 15+9 = 24 MI/d (24 *365 = 8750 MI/year) in addition to these two existing imports (15 and 9 MI/d)? One can only presume so from Portsmouth Water's WRMP2024.</p>	<p>We currently have a 15MI/d transfer into Hampshire from Portsmouth Water. Unfortunately Portsmouth Water have now informed us that the planned additional transfer of 9MI/d that would have been available in 2024 is no longer viable and hence we have removed this scheme from our revised dWRMP24.</p> <p>The 21MI/d transfer is in addition and is sourced from Havant Thicket Reservoir.</p>

Ref no.	Test and Itchen Association feedback	Southern Water response
234.5	<p>(xxv) Candover Abstraction Scheme (CAS). The CAS is part of Southern Water’s Drought Plan (2022) and was one of the discussion points of the 2018 Inquiry convened to deliberate on the EA decision to reduce the CAS abstraction license (from 27MI/d to 7MI/d) and increase the ‘hands off’ flow on the lower Itchen and Test. At the last minute SoW accepted the EA’s decision and a time bounded Section 20 Agreement was signed between the two agreeing to remove the CAS from the Drought Plan and respect the ‘hands off’ flow values once additional supplies were provided. An additional source identified at the time was for PW to build the Havant Thicket reservoir (HTR) and bulk supply water to Southern Water. This project has gone ahead and the HTR is under construction and is expected to be ready for use by 2030/31.</p> <p>If, as noted above, Southern Water will be obtaining additional water from PW at PWC Source A by 2024 they will already have additional water from PW which greatly exceeds (on an annual volume basis) the CAS drought order flow of 27 MI/d (27 * 4 months = 3240 MI/year). The question is – when did PW start supplying the 15 MI/d (15*365 = 5475 MI/year) to Southern Water, was it after the S20 Agreement in 2018? If so, by/in 2024 Southern Water will have already found additional water resources which exceed the peak and annual requirement from CAS. The CAS can thus be closed down in 2024, rather than in 2030/31 when the HTR is available.</p>	<p>Following the removal of the planned 9MI/d additional transfer from Portsmouth Water, the investment model cannot resolve the supply-demand balance before 2030 without use of the Candover Augmentation Scheme Drought Order.</p>
234.6	<p>(xxvi) Statement on removal of the CAS from the Drought Plan. There is no mention at all in the WRMP about the Candover Abstraction Scheme (termed the Candover Drought Order Scheme (CDOS) by Southern Water). As noted above under the 2018 Section 20 Agreement the CAS/CDOS is to be removed from Southern Water’s Drought Plan once additional water resources have been sourced. The WRMP must contain a statement unequivocally confirming this agreement.</p>	<p>We remain committed to reducing the use of Candover Drought option as soon as possible. We plan to cease the use of drought permits and orders across our supply area by 2042 except in the event of drought with more than 1-in-500 year severity</p>

27. Feedback by Tracey Viney and our response

Reference	Tracey Viney feedback	Southern Water response
295.1	<p>I object to both the Southern Water and WRSE Regional Plan. I am very concerned that there has not been a robust options appraisal and that the plans do not provide a 'best value' plan for customers or the environment. The plans are certainly not in line with customers stated preferences in relation to new water resources (see item 18 below).</p> <p>I call on Defra to delay approval of the plan and require that both Southern Water and WRSE look more carefully and seriously at other options including;</p> <ul style="list-style-type: none"> • Setting more challenging targets for leakage reduction & mains renewal. • More environmentally friendly alternative solutions that work with climate change for development of new water resources (see Appendix A & B). Southern Water's 'restricted' Options Appraisal demonstrates that investigation of many potentially viable greener solutions has been deferred to 2029 and that is not acceptable (see Appendix C). <p>I ask that you reject the proposal to move forward now with unsustainable, unnecessary and expensive effluent recycling and desalination schemes. There are cheaper and greener alternatives. We are not a severely drought-stricken desert country where these might be the only solution. Climate change will give the region wetter winters and water companies need to work with these changes to collect and store more water across the region.</p> <p>I specifically call on you to reject, or defer, the selection of the Budds Farm effluent recycling scheme via Havant Thicket Reservoir in Hampshire. Southern Water's summer 2022 consultation on the scheme indicated that initially this is required to provide an additional 15 MI/d as a drought resource for the Southampton area over 40km away.</p> <ul style="list-style-type: none"> • Appendix A provides an alternative cheaper greener plan for how the 15MI/d needed in the short term can be delivered in the Hampshire area. 	<p>We have responded to each of the specific comments below.</p>

Reference	Tracey Viney feedback	Southern Water response
	<ul style="list-style-type: none"> • Appendix B provides a list of other options that should be explored and brought forward in Hampshire before effluent recycling, which would be more environmentally friendly, as well as cheaper to develop and operate, reducing the impact on customer bills. • If effluent recycling were the only viable solution (which I don't believe it is) Appendix D provides a list of effluent recycling schemes that should be considered before the Budds Farm scheme, which proposes to use Havant Thicket Reservoir as an Environmental Buffer Lake. • Further information on the significant adverse impacts, concerns and risks identified associated with the Budds Farm via Havant Thicket Reservoir effluent recycling scheme are set out in Appendix E, which explains why this option should not be pursued. <p>Defra must also work urgently to introduce new minimum standards and Regulations much sooner than proposed to promote and ensure more efficient use of water including;</p> <ul style="list-style-type: none"> • Introducing new minimum standards for all water using products by 2030, not 2040 as currently proposed. • Introducing new Building Regulations for water efficiency by 2040 at the very latest, not by 2060 as currently proposed. <p>Page 27 of the WRSE Consultation Summary document confirmed that this will provide an extra 300 million litres of water per day, reducing water use across the region to 109 litres per person, and reducing the total cost of the WRSE Plan by £0.5 billion. The government must act now to deliver these benefits which will protect the environment and help minimise increases in customer bills.</p> <p>I would also urge Defra to work urgently with water companies to produce guidance on the introduction of variable charging tariffs. Using a suitable base rate for water use where the standard charge would apply, with a higher rate of charge where water is consumed above that base rate. This would help to make people think more carefully about their water usage, as if they trigger the higher rate of use this would regularly appear on their bill as an additional charge. The introduction of water</p>	

Reference	Tracey Viney feedback	Southern Water response
	<p>meters across the SE region in the plan period makes this a realistic option. Clearly there would be a need for checks and balances for vulnerable customers who have a genuine medical need to use more water. WRSE and all water companies should be more actively progressing the use of variable tariffs in the plan period. Tariffs are successfully used in other countries to educate consumers to reduce water usage and drive behavioural change.</p> <p>While I support the Southern Water/WRSE proposal in the south-east to stop relying on drought orders by 2040 to protect our chalk streams, the Environment Agency need to ensure that any abstraction licence revisions proposed work with predicted climate changes that will give us wetter winters and more frequent drier summers. More flexible abstraction licences are needed that allow water companies to take more water in winter when there is excess flow, which they can capture and store for dry summers in underground aquifers, new, or modified winter storage reservoirs. Using evidence based reductions in summer abstraction and utilising river flow triggers to control what can be taken out, while protecting the river ecology. A more flexible licensing system has the potential for multiple benefits including reducing flood risk by allowing abstraction in winter and creating new wetlands for water storage (reservoirs). There is also a need to review & update the Environment Agency environmental flow indicators to be more relevant locally (see item 11).</p> <p>The Ofwat funding mechanisms need to be urgently updated to encourage water companies to develop more sustainable new water resources which work with climate change predictions, including proactively collecting and storing more winter rain/river flows. Instead of rewarding companies for developing the expensive, carbon hungry, energy intensive infrastructure based solutions which they are currently proposing to develop in this plan period.</p> <p>Southern Water & Portsmouth Water should be leading the way on developing more environmentally friendly solutions that work with climate change and deliver wider benefits, not wait for Ofwat to change the funding mechanism in 2024 for the 2029</p>	

Reference	Tracey Viney feedback	Southern Water response
	<p>planning period. That would then deliver a truly Best Value Plan (WRMP24) for people and the environment, instead of selecting options that feed company profits, which customers have no choice but to pay for.</p> <p>My concerns and comments are set out in more detail below. These comments apply to both the Southern Water dWRMP and the WRSE Regional Plan.</p> <p>I urge Defra to take a more precautionary approach and ask Southern Water to take a step back for the sake of the environment and customers who will pay the cost for Southern Water's & WRSE inadequate options appraisal.</p> <p>Southern Water Customer & Hampshire Resident Former Public Health & Environmental Regulator (including Drinking Water Inspector) Retired Environment & Biodiversity Specialist for the Havant Thicket Reservoir Member of Havant Thicket Reservoir environment & other stakeholder sub-groups</p>	
295.2	<p>Specific concerns about aspects of the Southern Water & WRSE Plans</p> <ol style="list-style-type: none"> I do not support the proposal in the Southern Water & WRSE plans to reduce the frequency of hosepipe bans and Temporary Use Bans (TUBs) during droughts. The Southern Water Summary document on page 24 indicated a proposal to reduce the use of TUBs from 1 in 5 years to 1-in-10 years from 2030 onwards. <ul style="list-style-type: none"> If introduced in 2030 this would be at a time when Southern Water are still proposing to use drought permits on our chalk rivers, including the River Itchen & Test. This is not acceptable. This sends out completely the wrong message to water users. Having regular hosepipe bans helps to educate consumers as to the value of water and encourages them to use less water. If there was no 	<p>Our target level of service for TUBs remains 1 in-10 years and has been supported by customers over the last two planning cycles. The licence changes to our River Test and River Itchen abstractions introduced in 2019 and the actions we have agreed with the EA as part of our Section 20 agreement mean that, based on our assessment of flows in the River Test we are likely to need to implement more frequent TUBs in practice than our target. This is likely to remain the case whilst we are reliant on the River Test Drought Permit to maintain supplies.</p> <p>The change in level of service against emergency drought orders to 1-in-500 years is required by WRPG which states that water companies must plan to be resilient to a 1-in-500 year drought by 2039 and this is replicated in our core strategy. However, we have explored alternative dates to achieve this resilience through sensitivity testing at both earlier and later dates.</p>

Reference	Tracey Viney feedback	Southern Water response
	<p>risk, or a reduced risk of restrictions people would use more water.</p> <p>The Southern Water Options Appraisal confirmed that retaining the TUBs saves 4.01MI/d. This is 4MI/d that does not need to be taken from the environment, or developed as a new resource at great cost to customers. Southern Water must not be allowed to change the level of service being provided on TUBs in a drought as it is contrary to helping educate customers to use less water, and would drive the need to take more water for the environment.</p> <p>Note: That Southern Water Annex 6, page 17, indicated that customer engagement confirmed that they were happy with the current levels of service, including hosepipe bans, thus there is no driver for this retrograde step.</p> <p>I do not support the proposed change in the frequency of use of emergency drought orders (standpipes & rota cuts) from 1-in-200 to 1-in-500 by 2040 (Southern Water summary page 24), especially if that change drives the selection of unsustainable and expensive new water source solutions such as effluent recycling. I think that having a realistic threat of emergency drought orders is useful in educating customers to the value of water. Customers should not have to pay for infrastructure solutions which are only required to operate in a severe drought, which might not happen during the lifetime of that infrastructure.</p>	
295.3	<p>2. The targets for leakage reduction need to be more demanding. WRSE Summary Report page 26 confirmed that at present nearly 16% of the water that is treated and put into supply is lost to leaks (17% in Southern Water area). The Southern Water & Regional Plans only propose to reduce this by half across the region by 2050 (i.e. 8% of existing and new water resources will be lost by wastage, even in 2050) This is just not good enough. In the Southern Water area 92 million litres per day of treated water is currently lost to leakage (Southern Water Summary page 29). By 2050 46 million litres per day which customers have paid to</p>	<p>We are aiming to reduce leakage by 50% by 2050 in line with regulatory guidance and have tested a scenario of reducing it by 62% by 2050. However, higher targets come with additional deliverability risk and we need to keep a balance between the need to reduce demand with the need to maintain supplies under all but most extreme drought conditions.</p>

Reference	Tracey Viney feedback	Southern Water response
	<p>abstract and treat will still be lost. Water companies need to develop new technologies that allow them to detect, locate and repair leaks much more quickly. Southern Water summary page 4 suggests they 'could reduce leakage by 62% by embracing new technology and replacing old water mains'. Southern Water and all water companies should be setting themselves even more challenging targets to reduce leakage more quickly.</p>	
295.4	<p>3. More challenging targets for the rate of mains replacement need to be set, especially in the Southern Water area. Comparative figures on rates of mains replacement are not provided in the consultation documents, nor are targets. Portsmouth Water already have an active mains replacement programme, targeted to replace the mains with the most regular history of bursts, and to replace less durable pipe materials. Southern Water are lagging far behind on their rates of mains renewal. Action is required to ensure that Southern Water are required to undertake a more challenging programme of mains renewal to bring it in line with best practice rates in the water industry, not be towards the bottom of the league tables. Large volumes of water can be lost when mains burst, it is essential that targets for mains replacement are improved. Ambitious targets for mains replacement should be included in each company WRMP and the Regional Plan.</p>	<p>Mains replacement is a key part of our leakage reduction strategy. More details are provided in our revised dWRMP24.</p>
295.5	<p>4. Best Value Plans have not been provided by Southern Water or WRSE for the environment or customers, especially when you consider the cost to build, operate and the environmental impact of the options selected. Options have been selected to meet the need as a drought resource yet they require operation 24 hours a day, 365 days a year, even when the water is not needed, to keep the treatment plant and pipelines sweet. This can not provide 'best value', but</p>	<p>There is a statutory requirement for us plan for at least the next 25 years. We are therefore required to consider schemes that will be needed by 2050 as a minimum. Our plan looks at the next 50 years so that we can take a longer term view of supply-demand deficit and come up with a more efficient plan to address it. There are uncertainties associated with both supply and demand forecasts and that is why the WRMP is updated every 5 years to account for any changes in assumptions and regulatory guidance that can materially impact the plan.</p>

Reference	Tracey Viney feedback	Southern Water response
	<p>the schemes will make large profits for company shareholders!</p> <p>I am extremely concerned that the Southern Water & WRSE plans are focused on solutions which require significant infrastructure development, instead of looking robustly at all the options, favouring expensive large infrastructure schemes which deliver larger volumes of water and profits to the companies. Instead of seriously looking at more environmentally friendly smaller schemes that work with climate change, not against it. Multiple cheaper smaller schemes could produce the water needed in the next 25 year plan period starting in 2024 and provide more resilience, as they would be spread across the area and if one fails to come forward development of other options would already be underway.</p> <p>This approach to deliver large infrastructure projects is partly being driven/ justified by the forecasted huge demand deficit, particularly in a drought. The plans are based on forecasts using the second highest predicted population growth scenario, highest climate change scenario and highest abstraction reduction scenario. As the higher or highest end of all scenarios are being selected, it seems to be overweighted to high end predictions. As a result I believe it is highly likely that the Best Value Plans are over estimating future demand, which in turn will drive up the cost to customers. This is not appropriate, especially when we are experiencing a cost of living crisis and the most vulnerable in our society have no choice but to pay their water bill. I do not want to pay as a customer to build and operate an effluent recycling plant that is only needed in a serious drought.</p> <p>The amount of water needed in the longer term is very uncertain and will vary depending on many factors. There is no need to select options now to meet a very large demand deficit volume that 'may' be needed in 20 – 50 years time. Instead a number of smaller more environmentally friendly schemes (e.g. Test aquifer storage) can be selected to bridge the gap until we have</p>	<p>We have followed regulatory guidance in developing our supply and demand forecasts. The guidance requires us to use growth projections in Local Area Plans in forecasting demand. We have considered other growth projections to develop demand forecasts but are required to use local plan projections for our baseline supply-demand forecast. Projections based on Local Area Plans forecast growth to be higher than in other projections, such as the ones by the ONS, but this is beyond our control. Through our adaptive planning approach, we have looked at supply-demand deficits based on other growth projections and the resulting changes in our plan in terms of both option selection and delivery timelines. The alternative supply-demand deficit scenarios and the resulting changes in option selection were shown in our dWRMP24.</p> <p>It should be noted though that major infrastructure schemes in our plan are primarily being driven by the need to reduce the amount of water we take from rivers and groundwater rather than demand.</p> <p>As mentioned above, in planning for the future, we not only face restrictions in taking more water from the environment but are required to reduce the volume of water we already abstract from rivers and groundwater in order to protect and enhance the environment. We are promoting smaller schemes where possible through asset enhancement and source rehabilitation but the scale of supply-demand deficit we face requires us to consider large infrastructure schemes such as bulk imports, recycling and desalination. This is being done out of necessity.</p>

Reference	Tracey Viney feedback	Southern Water response
	<p>a clearer picture in 2030 of the longer-term need. If there is confidence that the Thames reservoir or Severn Trent canal transfer can be delivered, there is a good chance that a large effluent recycling scheme is not required in Hampshire. This is confirmed in the Portsmouth Water plan where it is indicated that effluent recycling is only needed at the end of the plan period (2040+) if the Thames water transfer is not delivered. If that regional transfer is delivered the Portsmouth Water plan confirmed they expect Southern Water to be transferring water into their area, rather than Portsmouth Water transferring water to Southern Water in Hampshire. This casts significant doubt as to the need to select effluent recycling via Havant Thicket Reservoir at this time. The 2022 determination document from Ofwat made it very clear that the selected effluent recycling solution (HWTWRP) was considered to be a very expensive option, especially as it was only a drought resilience asset. The costs were only considered reasonable if the capacity is to be increased over the medium to long-term to beyond an immediate resilience requirement. Given that the scheme does not provide good value now, and scheme costs are only going to rise, it should not be pursued now, especially as it is not yet confirmed, or agreed, that this larger extra resilience volume will definitely be required. Given the uncertainty as to the demand volume needed in the medium to long-term surely it makes more sense to develop a number of schemes, especially given that there are other alternatives available to provide the short to medium term resilience needed, which are better value for money. If Ofwat thought it was expensive last year, what will be the extra cost now that energy and inflation costs have risen so rapidly. The cost will only increase when other hidden costs associated with this new technology, such as sewer catchment management/ monitoring and carbon off-setting have been added to the bill for effluent recycling.</p>	

Reference	Tracey Viney feedback	Southern Water response
295.6	<p>5. The Southern Water & WRSE is not a plan of ‘least regret’ plan for Hampshire. They indicate that having a ‘least regret’ plan means a decision that balances minimal cost with maximum benefit accounting for any possible futures in the most feasible way (WRSE summary, page19). If this is a least regret plan then why are Southern Water/WRSE selecting effluent recycling via Havant Thicket Reservoir. A scheme that has a huge cost to construct, a massive cost to operate 365 days a year even though it is only needed in a drought, a huge environmental impact (scored the highest we could see on the SEA negative impacts), has an enormous carbon footprint, is not the preferred water resource solution type selected by customers, and may well alienate consumers and drive them to bottled water. It is a solution that has a high risk of failure if a robust Habitats Regulation Assessment is undertaken, which would only delay further reductions in abstraction on the River Test & Itchen. I believe it is also highly likely to become a ‘white elephant’ as the Thames desalination plant has become. With the cost of operation being so high the company don’t want to use it, such that much of its capacity was ‘out for maintenance’ when the plant was needed in the drought of 2022.</p>	<p>In addition to providing drought resilience the scheme is essential to allow both Southern Water and Portsmouth Water to reduce the amount of water we abstract from the sensitive chalk streams in Hampshire, in particular the River Itchen.</p> <p>We expect that future licence reductions will need to account for revised flow targets which could include large reductions (10s of MI/d) in normal year abstraction, especially if Natural England’s CSMG Flow Targets are applied to the River Test and River Itchen abstractions. Having already ruled out desalination for Hampshire through the RAPID process there are few viable alternative options that can supply the required volumes of water we will need in the long term to meet environmental targets.</p>
295.7	<p>6. The Options Appraisal process undertaken by Southern Water and WRSE has not been robust, other options are available. Both Southern Water & WRSE claim to have considered all of the options available, but this is not the case, especially in relation to the development of new water resources. For example, the Southern Water ‘restricted’ Options Appraisal Report identified many aquifers across the region (including in Hampshire & Sussex) that have the potential to be used for aquifer storage, but indicated that they had no plans to investigate them until the 2029 planning period, by which time it will be too late, the unsustainable and more costly effluent recycling scheme(s) will already have been selected. Appendix C lists a large number of more environmentally friendly options that should have been</p>	<p>We are required to demonstrate No Deterioration (i.e. no detrimental impact on the environment) when looking at new abstractions from rivers and groundwater, including enhancements to current abstractions. This is a multi-year process. Where we have included options to abstract water through either drilling new boreholes or other asset enhancements at existing sites, we need to allow sufficient time for investigations to be completed to establish No Deterioration.</p> <p>As part of this consultation process, the EA and Natural England have asked for evidence of environmental sustainability of these options before they support them.</p>

Reference	Tracey Viney feedback	Southern Water response
	<p>more fully investigated as part of the current plan options appraisal process. I believe that if these options had been investigated sufficiently that a significant number would have made it to the feasible options list. Even developing 3 or 4 of these schemes could have removed the need in the short term for the more expensive and environmentally unfriendly options selected by Southern Water, such as effluent recycling. What happens to the schemes listed in Appendix C which are still be investigated for WRMP29, will they be investigated before 2029?</p> <p>If they are not brought forward now they will never be included in this or future Water Resource Management Plans.</p> <p>Alternative types of scheme that should have been more fully investigated and certainly brought forward sooner in the Southern Water/WRSE plans include:</p> <ul style="list-style-type: none"> • Groundwater improvement schemes (making best use of existing facilities & sources) • Managed Aquifer Recharge Schemes • Purchasing under-utilised licences from industry • Water trading with third parties • Providing alternative sources for agriculture & industry • Catchment schemes • Optimising treatment capacity by improvements at existing works • Relocating abstraction points to minimise their environmental impact • New winter water storage reservoirs (including increasing the capacity of existing reservoirs) <p>Page 24 of the WRSE summary shows that these types of schemes are largely delayed until later in the plan period (2035 to 2075). This includes 22 improved groundwater abstraction and storage schemes, 7 reservoir schemes, as well as 'other' schemes like licence trading, catchment schemes and increased treatment works capacity.</p> <p>These schemes have clearly been identified as 'feasible' so why are they not selected for delivery sooner?</p>	

Reference	Tracey Viney feedback	Southern Water response
	<p>Why is there only one groundwater improvement scheme in Hampshire & Sussex? Are there other schemes that could come forward? Appendix C suggest that there is another scheme at Rotherfield which could have been investigated further & brought forward in the plan.</p> <p>How has the Budds Farm effluent recycling scheme via Havant Thicket Reservoir been selected as the preferred option in Hampshire when it is 40km from where the water is needed, and had the largest negative impact score that could be found in the short time made available by Southern Water to view the 'restricted' Strategic Environmental Assessment Report?</p> <p>The construction and operational costs are enormous, especially for a scheme that is only needed in a drought. If the process of selection takes into account carbon, biodiversity and natural capital, how have Southern Water & WRSE ended up selecting this option. The scoring criteria and selection process must be flawed.</p>	

Reference	Tracey Viney feedback	Southern Water response
295.8	<p>7. There has been inadequate investigation of Aquifer Storage Options. Incredibly no Managed Aquifer Storage Schemes (MARS) are selected in the period 2025 to 2035 in the Southern Water nor Regional Plans. Only 3 schemes are selected across the entire region from 2035 to 2075, with just one selected in the Hampshire & Sussex area. Aquifer storage works with predicted climate changes, taking excess water in winter and storing it natural underground confined aquifers that are already there, where the water will not be subject to evaporation, and the water can be stored until it is needed in dry summers, which are predicted to become more frequent. MARS should be cheaper and quicker to develop than effluent recycling, as it requires less infrastructure. The WRSE Summary Report page 9 indicated that shockingly only 15 MARS were considered in the whole region, yet the south-east has vast areas with underground aquifers, many of which occur within a folded geology creating confined aquifers which must be suitable for consideration for MARS, with the water for storage available from predicted wetter winters.</p> <p>The WRSE summary page 30 stated if water recycling schemes can not be progressed, then desalination plants or more storage options will need to be built instead. Given the lower cost to construct & operate, lower environmental impact, customer preference for aquifer storage, MARS options should be considered first, before effluent recycling.</p> <p>WRSE summary page 32 stated that MARS schemes will need more investigation by water companies. Confined aquifers have always been there, they are not a new phenomenon, and water companies have known for many years that abstraction licence reductions were coming, this is not a surprise. Water companies & WRSE should have more actively progressed the investigations of MARS options over the past 10 years for inclusion in the dWRMP24. A list of Southern Water groundwater storage options that should already have been progressed is set out in Appendix C, it is extremely</p>	<p>We have looked at ASR schemes as part our previous plans and have a MAR option in our WRMP24. These schemes require a specific combination of geologic and hydrogeologic conditions and require extensive testing over multiple years to establish their viability. We had identified a site near Worthing for a potential trial but could not secure land access. The EA and Natural England have expressed concerns over the MAR option in Hampshire and will be withholding their support for the scheme unless it has been demonstrated that the scheme is viable and will not have any negative environmental impact. We have therefore allowed a ten years' lead time for this scheme for investigations to be carried out.</p> <p>Annex 8 of our SoRs provides further details on our consideration of ASR/MAR schemes.</p>

Reference	Tracey Viney feedback	Southern Water response
	<p>disappointing that these investigations have not happened.</p> <ul style="list-style-type: none">- Was the failure to investigate MARS options a deliberate tactic so that Southern Water can argue there are no alternatives to effluent recycling? <p>Even the Southern Water CEO introduction to their consultation acknowledges they need to be making much better use of storage – both underground and using reservoirs! (so why not doing that?)</p>	

Reference	Tracey Viney feedback	Southern Water response
295.9	<p>8. The Test MARS scheme should be brought forward. This aquifer storage scheme has been included in the Southern Water & WRSE plans for delivery in 2042. Why is this environmentally friendly scheme that could be protecting the internationally renowned River Test much sooner not been brought forward as quickly as possible?</p> <ul style="list-style-type: none"> • Southern Water already have the treatment infrastructure in place. • Southern Water already own the land needed for the scheme. • The scheme would use excess river water in winter, which could help to reduce flood risk, providing multiple benefits. • It must be cheaper to develop, only requiring the construction of 5 boreholes, interconnecting pipework and pumps. • It is located exactly where the water is needed close to Southampton. • The aquifer can be topped up in winter and used to augment supplies in the summer reducing the need for river abstraction in the summer, and potentially stopping the need for drought orders more quickly. • The HRA screening indicated that the aquifer is deeply confined and there are no pathways to impact European protected sites. • The HRA screening indicated that up to 15MI/d could be provided by the scheme, yet the Southern Water public reports only refer to the scheme delivering 5MI/d. • Southern Water Annex 13 option fact file indicated it will take 6 years to investigate, this seems excessive, but would still enable the scheme to be available in 2030 if selected now. • Implementation and trial pumping for the Test MAR scheme should be commenced immediately as part of WRMP24, with delivery no later than 2030. 	Please see our response to 7 above.

Reference	Tracey Viney feedback	Southern Water response
295.10	<p>9. Climate impacts & energy use should be more of a driving factor in option selection in both the Southern Water & WRSE plans. The water industry, including Southern Water, is committed to net zero operational carbon by 2030. Yet instead of rejecting carbon hungry technologies such as desalination and effluent recycling, both the Southern Water and wider Reginal Plan actively selects these options instead of more sustainable solutions, even though they must operate 24 hours a day, even when the water is not needed. This shows the current selection process criteria and scoring is flawed.</p> <p>Any high impact solutions should be initially rejected and only brought forward again if there are no other solutions. Implementing alternative energy solutions to off-site carbon impacts of new water resource schemes should be a last resort. Construction of alternative energy will have it's own additional carbon footprint and additional costs to customers (with more profit for shareholders) which would not be needed if a sound options appraisal process had been adopted in the first place. Carbon off-setting should not be relied on as a solution when lower impact solutions can be selected. Page 36 of the WRSE summary states that; 'By measuring carbon in the development of the Reginal Plan, lower carbon options can be selected, helping to avoid emissions.' If this were the case why did lower carbon solutions not get selected in the Southern Water & WRSE Plans?</p>	<p>As an industry we are committed to achieving net zero by 2030 and further details on our plan to achieve this is set out in our net zero strategy.</p> <p>The best value decision making methodology we have used across all WRSE companies attempts to optimise the strategy across several metrics which include carbon emissions for each option. This includes the carbon emissions created through the construction process (capital carbon) and the emissions produced through their ongoing operation (operational carbon). This has taken account of the carbon reductions that will come as a result of the decarbonisation of the electricity network in our modelling.</p> <p>At a regional level we found that optimising between carbon and Best Value Plan scores as a whole also involves inherent tensions, as model runs optimising on carbon tend to have lower overall best value metric scores. We consider that the regional Best Value Plan and our WRMP24 provides a good balance between these metrics. We tested our dWRMP24 against both the least cost (which includes carbon costs) and a best environmental and societal plan which favours lower carbon options. A comparison of the best value metrics shows that whilst the best environmental and societal plan scores better against the SEA benefit metric, the core Best Value Plan performs better against the natural capital and resilience metrics. Overall there is very little difference between the three plans which indicates a stable set of scheme selections across the plans. This provides confidence in the choice of schemes in the Best Value Plan.</p>

Reference	Tracey Viney feedback	Southern Water response
295.11	<p>10. Southern Water have not made a genuine effort to look for new winter storage reservoir sites. The geology of Hampshire with large areas of clay overlying aquifers is conducive to finding new sites where excess winter surface water flows can be pumped for storage in new reservoirs. It is not acceptable to dismiss the search for new reservoir options on the basis that all rivers are over abstracted, since they are highly unlikely to be over-abstracted in winter. Nor is it acceptable for water companies to primarily look at reservoir storage by damming up rivers as part of the unconstrained options assessment, since it is obvious in the modern era that reservoir storage by damming up/ impounding rivers will never be acceptable. Potential sites for off-line pumped winter storage reservoirs should be investigated further, including in Hampshire. The reservoir sites already identified in the plan, including Blackstone in West Sussex which is currently not being developed until 2045, should be brought forward as quickly as possible, as should raising water levels in existing reservoirs, such as Bewl Water. These are better schemes than effluent recycling, with the opportunity to provide multiple benefits.</p>	<p>The status of the rivers as 'over abstracted' is designated by the EA and we are required to follow the CSMG when looking at abstracting from rivers. The new flow standards would apply year round even during the winter and our assessments have shown that if these flow standards are to be applied then we would have to further reduce the amount of water we can abstract from the River Test and River Itchen.</p> <p>Both the EA and Natural England have expressed concerns about the availability of flows for our proposed River Adur Offline Storage option and we need to carry out considerable work to address these concerns.</p>

Reference	Tracey Viney feedback	Southern Water response
295.12	<p>11. A more flexible and appropriate approach is needed to abstraction licencing; I note that the Southern Water summary page 22 confirms they don't know exactly where, when or by how much they will need to reduce their existing abstraction by, yet Southern Water & WRSE are planning for a worst case, with no phased reduction. The WINEP investigations which will inform this change are still underway or planned. This gives time for other alternative new water source solutions to be investigated further. The government requires that any regulatory changes must be proportionate and pragmatic, otherwise they can be challenged. There is no mention by Southern Water or WRSE of working with the EA to vary licences to take more water in winter, when rivers will not be over abstracted, while reducing summer abstraction to protect the river ecology. Water companies and regulators need to come up with a more balanced approach, with more flexible licencing, that allows water companies to take more water in winter when there is excess flow, which they can capture and store for dry summers in underground aquifers, new, or modified winter storage reservoirs. This should use evidence based reductions in summer abstraction and utilise river flow triggers to control what can be taken out. This will protect river flows and biodiversity, while also ensuring customers do not have to pay for extremely expensive water treatment plants that might only be needed in a severe drought, but have to operate 365 days a year to keep the plant and pipelines sweet. A more flexible system has the potential for multiple benefits including reducing flood risk by allowing abstraction in winter and by creating new wetlands (reservoirs). There is a need to review & update EA environmental flow indicators to be more relevant locally. I believe the Environment Agency environmental flow indicators are based on national criteria. There is need to develop new low flow indicators which are based on the actual local situation and functioning of the rivers to which they are being applied.</p>	<p>It is incorrect to say that our unconfirmed Environmental Destination reductions are not phased. They are phased and have been aligned as best we can with our latest understanding of our WINEP timelines and need to mitigate. The impact of our Environmental Destination rises from 62.53MI/d in 2030 to 92.93MI/d in 2050 under our Low Scenario, and 96.5MI/d to 250.32MI/d under our High Scenario. This represents a phasing from the introduction of legally compliant licence capping after 2030 to meeting or exceeding flow targets (Environmental Flow Targets and/or CSMG) by 2050. The phasing has been designed to prioritise highly sensitive catchments such as the Test and Itchen, where there is considerable pressure to further reduce abstraction.</p> <p>The EA has asked us to consider the risk of earlier sustainability reductions in this catchment when our lower Itchen licenses are due for renewal in 2025. We therefore need to balance our ability to provide greater protection for the environment by reducing abstraction against the pace at which we can deliver significant volumes of resilient alternative supplies, such as through the HWTWRP. If we were to accommodate the required reductions to meet these flow targets sooner, we would likely experience unsolvable deficits and would also need to place greater reliance on environmentally damaging drought permits and orders more frequently and for longer.</p> <p>It is correct that the timing and magnitude of reductions remains uncertain because it is critical that we work with regulators through our WINEP and other environmental programmes to build a robust evidence base to inform future abstraction licensing and any other mitigations to ensure that they are effective in enhancing and protecting the environment, and that any physical mitigations do not cause greater harm than good. This might also include developing alternative flow targets where considered appropriate.</p> <p>We will continue to work with the EA, Natural England, and WRSE to refine the timing and prioritisation of our Environmental Destination profiles and license reductions.</p>

Reference	Tracey Viney feedback	Southern Water response
295.13	<p>12. Bringing forward surface water regional transfers. Given that existing surplus surface water already exists in other regions, and the transfers can often use existing waterways for part of the transfer, why can some water transfer schemes not be brought forward more quickly? Transferring surface water via existing waterways can have multiple benefits including to biodiversity and recreation.</p> <p>In principle, I would support the larger size Thames reservoir option. However, insufficient information has been made available during the public consultation to understand the impacts of different size reservoir schemes (e.g. in relation to any ecological impacts), although I note that it is stated on page 29 of the WRSE summary that the larger reservoir performs better against reliability resilience criteria and also has additional natural capital benefits compared to the smaller reservoir.</p> <p>Note 1: I note that in the longer term plan some regional transfers are to be supplemented by effluent recycling, I do not support the selection of that without more robust risk, environmental and ecological impact assessment.</p> <p>Note 2: Southern Water summary page 34 refers to the potential for a new transfer from Havant Thicket to West Sussex. If this relies on effluent recycling being in place then I do not support this.</p>	<p>We have explored bulk import options with both our neighbouring water companies and neighbouring regions. Our plan includes bulk imports that have been agreed by donor companies. The timing of the transfers is dictated by the time required by the donor companies to develop the sources needed to support these transfers.</p>
295.14	<p>13. Urgent need to improve the ability to transfer water within the Southern Water area (esp.in Hampshire). Southern Water are lagging far behind other companies in this respect. Portsmouth Water have invested over many years to ensure that they have a well connected supply network across which water can be transferred at times of emergency and in a drought. Southern Water have not, leaving water supplies to customers vulnerable, even in the winter. This has been demonstrated twice in the past 3 months (December to February 2023) when large numbers of customers have been left without supplies in Hampshire. Southern Water summary page 12 refers to the need to investigate how they can improve their water transfer network in</p>	<p>As part of the Water for Life Hampshire programme, we are strengthening key network connections between Winchester, Southampton and Andover.</p>

Reference	Tracey Viney feedback	Southern Water response
	<p>Hampshire so they can move water around more easily. Customers are paying the price for years of underinvestment in the Southern Water network and poor planning by the Company. This needs to be urgently addressed to reduce the risk to customers as part of the WRMP.</p>	
295.15	<p>14. Neither the Southern Water or WRSE provide robust adaptive plans. Both Southern Water & WRSE describe their plans as adaptive plans that identify the priority investment needed between 2025 and 2035 regardless of what the future holds (WRSE Summary page 1). But the reality is that Southern Water have not undertaken sufficient work to assess the environmental impacts, construction or operating costs, to be able to have any confidence that a best value, adaptable plan is being pursued. Cheaper more sustainable options which could meet the short to medium term needs have not been adequately investigated, so the Company have used this as an excuse to reject them as not feasible. Southern Water have also previously dismissed options because they do not have the capacity, or cannot be expanded to deliver 60 or 75 MI/d, this is a flawed approach. I do not believe that the approach of selecting one large option is the best way forward in Hampshire to meet 'potential' forecast future demand. If a small number of these schemes could be brought forward for the period 2030-35 then a decision on the need for much larger schemes could be deferred until at least 2030. By which time there would be a clearer picture on population forecasts, abstraction licence changes (many WINEP schemes will have reported), and more environmental/ modelling studies can have been completed on the likely impacts of the larger schemes, such as effluent recycling, where the impacts are currently unknown (Appendix E, item 4 & 6). I believe this would provide a more resilient adaptive plan, as if one scheme cannot be brought forward there are others already in development.</p>	<p>It is unclear which alternative small-scale options are being referred to here that could be brought forward to 2030-35 to address the supply-demand deficit. We have a statutory requirement to produce a plan that can meet the projected supply-demand deficit under all planning scenarios in each year of the planning period. Deferring options until the results of WINEP are known would mean having unresolved supply-demand deficits in the interim which would make our plan legally non-compliant.</p> <p>Looking ahead to 2075 rather than a shorter timescale gives a better view of an option's utilisation over time; especially when the benefits from our demand management activities are fully realised by 2050.</p>

Reference	Tracey Viney feedback	Southern Water response
	<p>Southern Water are looking ahead to 2075 and using this to help justify larger schemes. However, the further ahead you look the more uncertain all of the variables are (Southern Water summary page 22). While it is good to keep any eye on the future, there is only a requirement to plan for the next 25 years. Projections beyond 25 years should not be driving the selection of larger schemes at the expense of smaller more environmentally schemes, and I am concerned that this is happening in the Southern Water & WRSE Plans.</p>	

Reference	Tracey Viney feedback	Southern Water response
295.16	<p>15. High risk strategy of selecting one large effluent recycling option in Hampshire. I am very concerned that Southern Water are putting all of their eggs in one basket for Hampshire, by selecting a large effluent recycling scheme, when this is a new treatment technology to the UK, where the impacts are poorly understood, which does not have public support, and for which a robust Habitats Regulation Assessment should show will have a significant impact on European protected sites, (particularly Langstone Harbour), especially when the in-combination effects with the existing Havant Thicket Reservoir are taken into account. The existing HRA screening assessment does not take into account all of the risk pathways and is flawed.</p> <p>Southern Water have not learnt the lesson from putting all of their eggs in the Fawley Desalination basket, only to have the scheme rejected when the environmental impacts were more robustly assessed. This has delayed the development of a viable new water resource option by 5 years. Southern Water cannot be allowed to make the same mistake again. It is customers who are paying for this poor planning and decision making, but the environment is also suffering as drought permits on the River Itchen and Test now have to continue for longer than was necessary if Southern Water had undertaken more through options appraisal and adopted a more robust plan 5 years ago.</p> <p>Southern Water owns Gate 2 reports highlighted the high risks below associated with pursuing effluent recycling from Budds Farm via Havant Thicket Reservoir as the preferred option.</p> <ul style="list-style-type: none"> • Reverse Osmosis is not an established treatment process for effluent recycling at this scale in the UK (recognised in Southern Water Gate 2 HT report, page 29). This means that; <ul style="list-style-type: none"> ○ The market may not have confidence in the validity of such an option, and ○ The public may not accept drinking water that is created from effluent recycling, it will certainly 	<p>Southern Water have selected a water recycling scheme in conjunction with a storage reservoir. Over the longer term other strategic water resources connections are being developed.</p> <p>This scheme is as the result of more robust environmental assessment, which included desalination, and was overseen by RAPID. The recommendation is that the HWTWRP scheme is the most likely to be given the appropriate consents option within the given timeframe. While we know there are risk associated with the scheme, they are lower than alternatives.</p> <p>Peel Common and Portswood WTWs would not provide the volume of water required and would have similar risks.</p>

Reference	Tracey Viney feedback	Southern Water response
	<p>taste different to the water they are used to and this may give rise to concerns and complaints.</p> <ul style="list-style-type: none"> • The risk of customer acceptance associated with the change in taste of the water has not been determined (Southern Water Gate 2, Annex 3, Page 53) • Risk of reputational damage to Southern Water and Portsmouth Water (recognised in Southern Water Gate 2 Havant Thicket report, page 27, table row 5) • Southern Water state that agreement for using up to 75Ml/d from Havant Thicket Reservoir requires significant re-design not currently part of Portsmouth Water's planning application, therefore this is a major risk (Southern Water Gate 2, Annex 5, page 284). • Peel Common/Portswood Water Recycling Plants could be seen as a standalone scheme to support PWC Source A WSW (Southern Water Gate 2, Annex 5, page 284). i.e. There clearly are other options even for effluent recycling, despite what Southern Water is saying publicly. <p>Appendix E to this document also highlights the risk flagged by Southern Water of a public enquiry due to the late introduction of this effluent recycling scheme as the preferred option, when it was not included in the previous WRMP19 as the backup solution to Fawley desalination. All of these factors demonstrate that there is a significant risk to the delivery programme of Southern Water selecting effluent recycling via Havant Thicket Reservoir as the preferred and only new water resource solution in Hampshire for the period to 2035.</p>	

Reference	Tracey Viney feedback	Southern Water response
295.17	<p>16. Objections & concerns about Budds Farm effluent recycling via Havant Thicket Reservoir. I do not support the Southern Water/ WRSE proposal to proceed with the Budds Farm effluent recycling scheme for delivery in 2032, known as HWTWRP. I am extremely concerned about the adverse impact of the effluent recycling proposal, and the plan to use the Havant Thicket Reservoir as an Environmental Buffer Lake, prior to onward supply via Portsmouth Water & Southern Water treatment works to customer taps. Key concerns include:</p> <ul style="list-style-type: none"> • High risk of rejection of the water mixed with recycled effluent for drinking by customers. • Resultant increase in cost to consumers and environmental impact associated with the use of millions more plastic bottles. • Significant cost to customers of building and operating a drought scheme that must operate 365 days per year, even when the water is not needed. • Loss of environmental benefits originally promised that facilitated the destruction of 13ha of Ancient Woodland, including nitrate improvements in coastal SPA, SAC, RAMSAR. • Loss of a unique biodiversity opportunity to provide a chalk spring fed reservoir • Loss of biodiversity net gain promised, due to keeping topped up with recycled effluent. • Impacts of changes in water quality on biodiversity in the reservoir, including salinity, temperature, increased risk of eutrophication and algal blooms. • Increased risk to water quality and of pollution incidents. • Lack of risk assessment and improved control in the sewer catchment. • Impacts on coastal European Protected Sites and reduced benefits. • A full EIA and HRA has not been undertaken, Southern Water have no plans to do that until it is too late. The scheme should fail a robust HRA. 	<p>We are carrying out investigations on different aspects of HWTWRP. We plan to share the results of these investigations in future public consultations on this scheme.</p>

Reference	Tracey Viney feedback	Southern Water response
	<ul style="list-style-type: none"> • High energy use & carbon impact – it is just not credible to state that it is a sustainable solution. It is also contrary to the commitment for net zero carbon by 2030. • Concern that because this is a new technology costs will spiral and be passed on to customers. • Environmental & ecological impact of pipeline & multiple pumping station construction. • Additional community & recreational benefits being double counted & potentially lost. • The environmental screening is not robust leading to inappropriate scoring and selection. • Information provided by Southern Water is impenetrable to the public and stakeholders. <p>More detail on these and other concerns have been set out in Appendix E.</p> <p>Southern Water summary page 28 states that one of the 4 priorities for their plan is to provide 'new water resources that provide resilient and sustainable supplies'. Effluent recycling via Havant Thicket Reservoir cannot be considered sustainable or best value and should be rejected.</p>	

Reference	Tracey Viney feedback	Southern Water response
295.18	<p>17. The public consultation has been completely inadequate and not properly advertised. Southern Water & WRSE have not adequately publicised the public consultations on the dWRMP or draft Regional Plan. There is a complete lack of awareness of the planned change in the source of drinking water supplies from rivers, springs & aquifers to treated recycled effluent. When concerned citizens have spread the word customers are shocked that they have not been consulted, or made aware of the consultation. Examples of the inadequacy of the public consultation and additional concerns are set out in Appendix F. Case studies from severely drought-stricken parts of the world that use treated recycled effluent emphasise the importance of getting the local community/consumers on board before progressing this option, as customer acceptance is critical to the success of such schemes, Southern Water & Portsmouth Water have completely failed to do this. If consumers turn to bottled water in preference to tap water there are social and financial consequences for society, not to mention the environmental impact and cost of supplying, transporting and disposing of plastic bottles. Effluent recycling in the UK should not proceed unless the water company (Southern Water & Portsmouth Water) has fully engaged with their customers to ensure that they support the proposal. This is not the case for the Budds Farm effluent recycling scheme via Havant Thicket Reservoir.</p>	<p>We have followed the statutory consultation process on our WRMP. We will be carrying out further public consultations on specific schemes such as HWTWRP as we progress work on these schemes.</p>
295.19	<p>18. Not following Feedback by customers in options selection. Southern Water & WRSE indicate that they have engaged with customers in the development of their plans to understand their priorities and the types of scheme they prefer. WRSE summary page 8 states that this information has been used to assess the different plans they have developed. The customer research is clear that customers favour reducing leakage, demand control measures, and protecting the environment as a priority, with preference for solutions which are seen as more natural like catchment management (Southern</p>	<p>Please see Annex 7.1 of this SoR for more details on customer insights work and annex 6 of our revised dWRMP24 for details on our customer engagement work.</p>

Reference	Tracey Viney feedback	Southern Water response
	<p>Water Annex 6, page 17). The Southern Water summary report page 21 confirmed that customers particularly welcome aquifer storage & recovery as being innovative and having a positive environmental impact. They view reservoirs as positive because of the environmental, health and community benefits they can bring.</p> <p>Desalination was least favoured, with effluent recycling being low in the choice of preferences, with concerns about the cost, potential environmental impact in terms of energy, chemicals used, waste production, with further assurances needed around water quality.</p> <p>Despite stating that customer feedback has been taken into account the options selected by Southern Water and WRSE in both the short and long-term are dominated by effluent recycling and desalination schemes, as shown on the maps in the WRSE summary pages 37 & 38, which include the Southern Water selected options. This confirms that customer feedback is not being given adequate weight by Southern Water or WRSE.</p> <p>Southern Water Annex 6 confirmed (page 17) that customers felt strongly that reductions in risk of emergency drought measures need to be achieved via sustainable investment and protecting the environment. By selecting effluent recycling as a drought resource Southern Water are ignoring this Feedback by their customers, as the solution is not sustainable. It must operate 365 days a year even when it is not needed as it is only required as a drought resource, and is not located close to where it is needed.</p>	

Reference	Tracey Viney feedback	Southern Water response
295.20	<p>19. Concern the forecast population figures used are excessive & driving a huge demand deficit. The population growth figures being used by water companies (including Southern Water) and WRSE is driving a large demand deficit, which in turn is leading them to select large environmentally unfriendly expensive infrastructure based schemes. While the WRSE document presents a range of population forecasts on page 13 from different sources. Page 13 confirms that the reported pathway is to 'meet population growth in-line with local authority housing plans'. This is actually the second highest population forecast, allowing for 23% population growth across the SE region, which generates an increased peak demand of 755Ml/d. This seems to be unrealistically and excessively high, especially given that local authority plans are currently in a state of flux, and the fact that page 20 confirms there is another population decision point in 2030. It would seem to be more sensible and prudent for water companies and WRSE to plan on the basis of a more moderate growth figure, such as the 16% growth forecast by the Office of National Statistics and to review that again in 2030.</p>	<p>We are required by the WRP to use growth projections based on Local Area Plans. As part of our adaptive planning approach, we have used other growth forecasts, such as the ones by ONS that project lower growth, for developing alternative demand forecasts. Likewise, we have also considered alternative climate change impact and Environmental Destination scenarios in developing the plan. Changes in selection of options and/or the timing of their selection as a result of using alternative assumptions were covered in our dWRMP24.</p>

Reference	Tracey Viney feedback	Southern Water response
295.21	<p>20. Real concern that rejection & selection of options is driven by a search for profit. There is a real concern amongst the local community and environmental groups that Southern Water are selecting options that require a large amount of infrastructure (treatment plant, buildings, tanks, pipelines & pumping stations), as they are permitted under the funding guidelines to make a profit from such investment in infrastructure, but not from maintenance like fixing leaks. Selecting options which do not involve the construction of a lot of infrastructure has no advantage to water company shareholders. There is also concern that Southern Water are keen to rush through very large infrastructure projects (such as effluent recycling using Havant Thicket Reservoir) in the current plan period to achieve maximum profit before the funding mechanism is changed by Ofwat, to drive selection of more environmentally friendly schemes with wider benefits to society as a whole from 2024 onwards. In 2018 Michael Gove, Environment Secretary at the time, berated water bosses in general saying: ‘Far too often, there is evidence that water companies have not been acting sufficiently in the public interest. Some companies have been playing the system for the benefit of wealthy managers and owners, at the expense of consumers and the environment. Some companies have not been as transparent as they should have been. They have shielded themselves from scrutiny, hidden behind complex financial structures, avoided paying taxes, rewarded the already well off, kept charges higher than they needed to be and allowed leaks, pollution and other failures to persist for far too long’.</p> <p>Water company charges (and therefore revenues) are determined by Ofwat, based on the costs presented by the companies, including an inflation-linked factor to ensure attractive returns to investors on any new infrastructure built. There is thus a financial incentive to boost ‘investment’ and therefore returns to shareholders and owners. There is significant concern that this attitude persists today and that Southern Waters Draft Plan out for consultation, which includes the proposal for</p>	<p>The 'profitability' of an option is not a criterion in the option appraisal process (Section 6 of our technical report) nor a criterion considered by the investment model in option selection (Section 7 of our technical report). It is therefore not a factor in the decision-making process.</p>

Reference	Tracey Viney feedback	Southern Water response
	<p>a large amount of infrastructure associated effluent recycling, reflect the desire to make good profits for owners and shareholders, rather than provide an environmentally friendly cost-effective solution for customers, who will have to pay for all the new treatment plant, pumping stations and pipelines required, as well as the profit element. This must not be allowed to continue unchecked by Defra and the environmental regulators.</p>	

Reference	Tracey Viney feedback	Southern Water response
295.22	<p>21. Alternative options for effluent recycling including Peel Common. If effluent recycling were the only option to meet the Hampshire areas water supply needs (and I don't think it is) then why have Southern Water selected to treat water from a sewage works which is furthest from the Southampton area where the water is actually needed, requiring construction and daily pumping along more than 40km of pipeline? It makes no sense to select the Budds Farm WWTW works just because it is close to Havant Thicket Reservoir. There are other Waste Water Treatment Works (WWTW) options that are nearer to where the water is needed, as set out in Appendix D, that do not require the use of the Havant Thicket Reservoir and the detrimental environmental impacts of that.</p> <p>If effluent recycling is to remain in the plan as a selected option then underground storage should be looked at more seriously as an alternative to environmental buffer lakes. Storage could take place in more than one aquifer to achieve the capacity required. This does not appear to have been considered by Southern Water in the options appraisal. This storage method is commonly used in countries already using effluent recycling (e.g. Australia & in California, USA). Retention in an aquifer is seen there as reducing risks, it increases storage time, and has the benefit that the water cannot evaporate. Peel Common effluent recycling scheme is the Southern Water back up effluent recycling scheme, but this barely seems to be mentioned in the consultation documents. Even though it is funded by Ofwat for Gate 3 it is being given no priority for further investigation by Southern Water. It has significant benefits over the Budds Farm effluent recycling option selected.</p> <ul style="list-style-type: none"> • Peel Common WWTW does not have the saline intrusion problem which Budds Farm has, it is where the effluent recycling plant was originally sighted, is closer to Southampton where the water resource is actually needed, reducing the construction cost, as well as the carbon and energy footprint of operating this drought 	<p>The capacity of Peel Common WTW during a drought is calculated to be about a third of Budds Farm WTW. It is therefore not large enough to provide the required volume on its own. If the two sites are used in conjunction with each other, as proposed in larger water recycling plant options, then there is a benefit.</p>

Reference

Tracey Viney feedback

Southern Water response

- resource option. Thus it must be cheaper to build and operate than the Budds Farm option.
- Southern Water’s own Gate 2 Report confirmed that there would be environmental benefits to the coastal waters of the Solent of selecting Peel Common rather than Budds Farm.
 - Because Peel Common and other WWTW do not have the saline intrusion problem, which Budds Farm WWTW has, the recycled effluent can be used to augment river flow which would have environmental benefits.
 - If river augmentation or underground storage cannot be progressed then there is still the option to build a bespoke environmental buffer lake closer to where the water is needed, as previously proposed by Southern Water.

Southern Water Gate 2, Annex 5, pg 139/140 indicated that the Peel Common option was assessed as having fewer consenting risks. This option still has the potential for future expansion utilising Budds Farm effluent if the Thames transfer cannot be delivered later in the plan period.

Defra should be challenging why the Peel Common option (not including storage in Havant Thicket Reservoir) which already has funding support from Ofwat, is not being actively investigated and pursued despite the environmental and cost benefits it has over the Budds Farm option.

Note 1: The Peel Common effluent recycling option is barely mentioned in the Southern Water consultation. It is not even included in the Habitats Regulation Assessment.

- Why is that when it remains an active and viable option?

Note 2: The Southern Water Technical Report confirms at 7.4.4 that they have tested a scenario where there is no recharge of Havant Thicket Reservoir by recycled water from HWTWRP. This results in the schemes replacement by direct transfer of recycled water from HWTWRP via an environmental buffer. The option is

Reference	Tracey Viney feedback	Southern Water response
	<p>selected from 2031 to provide 75MI/d. This demonstrates that there is a viable alternative to the use of Havant Thicket Reservoir. This also results in the earlier selection of the River Adur off-line reservoir, with an earlier start date of 2041 in Sussex.</p> <p>Note 3: The Southern Water Technical Report sensitivity analysis Table 7.12 shows that under the scenarios tested for the Least Cost Plan with a revised demand forecast the HWTWRP 45 MI/d and 60 MI/d is not always selected. The Test MAR groundwater storage option is selected earlier in 2040 and the Woolston recycling option is selected earlier in 2042. This clearly demonstrates that Southern Water does have viable alternative options.</p>	

Reference	Tracey Viney feedback	Southern Water response
295.23	<p>22. Why move the recycled water so far in Hampshire, it makes no sense? If the new water resource is needed at Otterbourne WTW (or in West Hampshire) to offset the loss of abstraction from the River Itchen & Test then;</p> <ul style="list-style-type: none"> • Why is an option that recycles sewage and stores it in an Environmental Buffer Lake closer to the Otterbourne WWTW not being considered more rigorously? (It must be lower cost and more environmentally friendly to avoid pumping large volumes of water more than 40km for more than 70 years, plus it removes the need for the environmental footprint of a 40km+ pipeline) • Why are Southern Water proposing to pump recycled sewage effluent from the Budds Farm WWTW to Otterbourne when there are other sewage works much closer to Otterbourne? • Why is the sewage effluent not being taken from a WWTW in West Hampshire? Particularly one which currently discharges into a river, then there would be the double environmental benefit of reducing the amount of sewage discharged into our rivers, and of recycling effluent. For example; I believe the Romsey WWTW discharges into the River Test, the Portswood & Chickenhall WWTW's discharge into the River Itchen. There is also a WWTW at Millbrook which would be closer to where the water is actually needed. • If there is a genuine reason that sewage cannot be recycled from any of the smaller works which discharge into Hampshire rivers, then why can Peel Common WWTW not supply sewage for recycling and pump it to PWC Source A, Otterbourne, or an EBL, as it is a very large works and that is where the trial recycling plant has already been located? Why is there a need to pump sewage or recycled effluent the extra distance from Budds Farm? <p>The requirement to move water from Budds Farm WWTW via HTR to Otterbourne will require two pipelines, including a 40km(+) pipeline. These pipelines require;</p>	<p>The alternative to HWTWRP was Option B.5 in our RAPID Gate 2 submission. This option includes water recycling and transfer via a new environmental buffer. Its main component parts are as follows:</p> <ul style="list-style-type: none"> • Abstraction from Budds Farm and Peel Common WTWs; • Treatment at a new water recycling plant to produce recycled water (75MI/d); • Transfer (ca. 40km) to an Environmental buffer Lake at Otterbourne WSW; and • Abstraction from the Environmental buffer Lake (75MI/d) and treatment at Otterbourne WSW. <p>This option therefore still requires construction of a similarly large pipeline as there is not suitable wastewater treatment works in the vicinity of Otterbourne WSW. This alternative does not remove those environmental impacts. The HWTWRP represents better value for customers than the back-up option and is better able to meet long-term regional supply requirements. Due to the smaller size of the environmental buffer lake, the scheme also carries greater water quality risks compared to the HWTWRP. It is not currently being taken forward in parallel.</p> <p>Sewage works closer to Otterbourne WSW are much smaller than Budds Farm WTW and would still involve construction of pipelines potentially across the River Test and River Itchen SSSI and the Itchen SAC. Movement from west to east (from the Test to the Itchen) is also complicated by the urban Winchester area which would increase costs and similarly Portswood WTW is located in the urban area of Southampton. Typically, these sewage works are smaller and so multiple pipelines from several wastewater works would be required to achieve the same benefit if used as the source of the water. In addition, these works already provide either direct or indirect discharge (via groundwater) to the River Test and River Itchen providing de-facto reuse and flow support. Removal of that volume might necessitate further abstraction licence reductions.</p> <p>The capacity of Peel Common WTW during a drought is calculated to be about a third of Budds Farm WTW. It is therefore it is not large enough on its own to provide the volumes of water required.</p>

Reference	Tracey Viney feedback	Southern Water response
	<ul style="list-style-type: none"> • A pipeline to cross below Brockhampton Stream and Hermitage Stream, immediately adjacent to Langstone Harbour (SAC, SPA, RAMSAR) • A pipeline to cross below the River Itchen (SAC) • A pipeline to cross the River Meon (Compensatory SAC habitat & SSSI) • A pipeline below the A3(M) & a pipeline below the A27 • A pipeline below several main line railway crossings • Diverting the pipeline around blocks of Ancient Woodland <p>It makes no sense to have a drought resource that requires 7.5Ml/d to be treated and pumped 40km+ every day of the year, even when the water is not needed. It is not credible that Budds Farm WWTW is the best, most environmentally friendly option for effluent recycling, especially when you consider the impacts of construction & daily operation.</p>	

Reference	Tracey Viney feedback	Southern Water response
295.24	<p>23. Way forward for water resource planning in short term to 2035, with review at 2030. Local groups /individuals who are concerned about the Southern Water Draft Plan and the inclusion of effluent recycling via Portsmouth Water Havant Thicket Reservoir, are keen to promote an interim alternative solution. At the time of the summer 2022 Southern Water consultation Southern Water indicated that Budds Farm effluent recycling only needed to provide 15MI/d in the early years, but they wanted the option to expand the scheme to be able to treat up to 60MI/day, by adding treatment modules at a later date, which in conjunction with the reservoir can deliver up to 90MI/day in the long-term. Therefore, in the short term if they could prioritise other options that together can deliver 15MI/day between 2025 and 2030-35, such as those set out in Appendix A, then a decision on effluent recycling is not needed now, it can be deferred to 2030. That buys more time for progress to be made on the impact assessments for effluent recycling and regional water transfer options. If regional transfers can then be confirmed as feasible by 2030 (the next critical decision point), the need now to press for large environmentally unfriendly, carbon hungry, effluent recycling schemes, which have to be operated all year round, despite only being needed in a severe drought, is reduced/delayed. Such an approach also allows time for more robust information to become available on future population growth and likely future abstraction reductions, which will give a clearer idea of the future demand and thus the actual volume of new water resources needed in a drought after 2030.</p> <p>I urge Defra to take a more precautionary approach and ask Southern Water to take a step back for the sake of the environment and customers (Southern Water & Portsmouth Water) who will pay the cost for Southern Water's & WRSE inadequate options appraisal.</p>	<p>We currently do not have options that can readily be developed to provide up to 15MI/d in the short term to augment Havant Thicket Reservoir.</p> <p>Under the Section 20 agreement with the EA, we are required to progress strategic solution as soon as practical in order to end reliance on drought permits and orders in Hampshire to increase supplies during a drought. Deferring a decision to 2030 would mean extending the use of drought permits and orders up to the 2040. This may not be acceptable to the regulators and stakeholders in the area.</p>

28. Feedback by Test Valley Borough Council and our response

Reference	Response comment	Southern Water response
170.1	<p>The local water environment is an important resource within Test Valley, including in relation to its biodiversity, economic and leisure roles. The River Test and its tributaries are highly treasured chalk streams, with significant portions designated to be at least of national ecological importance. It also is a defining landscape feature and a core part of the Borough's identity.</p> <p>The Council is keen to ensure that water quality is retained and where possible enhanced, as well as making sure that water resources are sustainably managed. This is not only in terms of total water availability but also the seasonality of flows (where relevant) and other factors that can influence the ecology and wider environment.</p> <p>The Council welcomes ongoing engagement with Southern Water on this and other related matters. We recognise the mutual benefit of such engagement, for example in relation to planning for future population growth and ensuring adequate infrastructure is available to support existing and new customers without a risk of detrimental effects to the environment.</p>	We acknowledge and welcome the Council's feedback on our dWRMP24.
170.2	<p>It is recognised that significant investment is needed in order to address the identified challenges. A balance will need to be struck to ensuring the affordability of bills to customers, alongside delivering appropriate water resources and conserving the environment.</p> <p>In the context of the survey questions, the Council provides the following comments.</p>	The comment is noted. Our specific responses are given below.
170.3	The alignment between the WRMP and best value Regional Plan, along with collaboration with other water companies, is supported to enable the identification of the most sustainable and appropriate options, not just those that may be available locally. We also welcome the use of the adaptive approach to planning, particularly for the longer	The comment is noted. We are pleased that the Council is supportive of this aspect of our plan.

Reference	Response comment	Southern Water response
	term when there is increased uncertainty of the extent of impact of the identified challenges.	
170.4	The use of a mix of measures and schemes to reduce demand and secure adequate water resources, whilst conserving the environment, is welcome. The identification and delivery of measures to address current deficits in water resources should progress as soon as practical to reduce the risk of use of drought orders and permits, as well as to avoid adverse impacts on the environment.	<p>We and other water companies are planning to reduce our reliance of drought permits and orders to increase supplies by 2041. We have carried out additional sensitivity testing to understand the impacts on our strategy and Best Value Plan if we were to meet that target earlier or if we were to rely on drought measures for longer.</p> <p>We have provided a clearer narrative on the use of drought permits and orders in our revised dWRMP24.</p>
170.5	The Council supports plans to continue to reduce leakage, including through appropriate maintenance of existing infrastructure, and work towards supporting customers to reduce average personal daily water use. It will be important to consider how to engage with customers on such matters, including the recognition of the role they can play in contributing to reducing the need for new water resources.	The comment is noted. We are pleased that the Council is supportive of this aspect of our plan.
170.6	The Council is supportive of the proposal to introduce mandatory labelling of products that use water. We would also support the additional option of amending Building Regulations to deliver more water efficient homes. The Council already secures higher levels of water efficiency from new development through policies in its adopted Local Plan (delivered through the Building Regulations process). We would need support from Southern Water to continue to evidence this and potentially move towards securing greater levels of water efficiency in the future.	The comment is noted. We are pleased that the Council is supportive of this aspect of our plan.
170.7	The Council supports the proposals to increase the connectivity of the water supply network, including to aid in enhancing its resilience. A number of the proposed pipelines would include stretches within the Borough. We appreciate Southern Water's continuing engagement on these schemes. The route of new pipelines will need to be considered carefully to minimise disruption and avoid sensitive receptors.	The comment is noted. We are pleased that the Council is supportive of this aspect of our plan.

Reference	Response comment	Southern Water response
170.8	<p>We are supportive of the ambition to proactively use catchment and nature-based solutions, where appropriate, to help improve the quality of water sources. There are a number of organisations considering such proposals and it will be essential that there is co-ordination of activities. The Council is working with others, including Southern Water, through the Partnership for South Hampshire in relation to schemes of this nature that are supporting the implementation of projects associated with nutrient neutrality for new residential development. There may also be opportunities for wider engagement in the future through the preparation of Local Nature Recover Strategies.</p>	<p>The comment is noted. As part of our Catchment First strategy, we are working with farmers and landowners to promote local solutions.</p>

29. Feedback by Tunbridge Wells Borough Council and our response

Reference	Tunbridge Wells Borough Council feedback	Southern Water response
266.1	<p>Thank you for consulting Tunbridge Wells Borough Council (TWBC) on the above document. We note the content of this important document which sets out how Southern Water proposes to provide customers with a high quality and reliable supply of water for customers and improve the water environment for future generations.</p> <p>TWBC realises that the plan has been developed with Water Resources South East and seeks to set out how Southern Water will meet the challenge of securing sustainable long-term water supplies and protect the environment through the efficient use of water and minimal wastage, new water sources that provide resilient and sustainable supplies, a network that can move water around the region and catchment and nature-based solutions that improve the environment we rely upon. Also, that Southern Water is working with other companies to develop inter-regional options, notably of relevance to TWBC is any inter-relationship with South East Water.</p> <p>TWBC acknowledges the challenges faced by Southern Water in ensuring a resilient water supply in a time of population growth across the region as well as the impacts of climate change and the need to protect the natural environment within an area classed as being seriously water stressed and the subsequent need for an 'adaptive planning approach' as set out to manage longer term planning strategies.</p> <p>It is noted that on page 17 of the document, that the overall long-term strategy for the Eastern Area of the region covered by Southern Water includes the 'raising of Bewl Reservoir' which lies on the Kent/Sussex border on the edge of the Tunbridge Wells borough boundary.</p> <p>In reviewing the document, it is noted that in terms of the Kent area, wastewater services are provided by Southern Water</p>	<p>The comment is noted. We welcome the contribution by the Council to our plan.</p>

Reference	Tunbridge Wells Borough Council feedback	Southern Water response
	but water is supplied by other water companies – namely South East Water, particularly in relation to drinking water supplies for the borough. However, there is much overlap in terms of water transfers, infrastructure and supplies between the regions served by both operating companies.	
266.2	<p>Taking the above into account, TWBC would highlight the following in response to the Draft Water Resources Management Plan:</p> <ul style="list-style-type: none"> • TWBC supports the aspiration of Southern Water in ensuring that there is resilience in the future supply of water within the region and in particular within the identified 'Eastern Region' covered by Southern Water. 	The comment is noted.
266.3	<ul style="list-style-type: none"> • TWBC supports the approach that Southern Water have taken to the assessment of demand and forecast of future supply and the development of options and scenarios for meeting the need as set out within Section 6 of the document including new resources and storage, transfers between and within regions, recycling of water, reducing leakage, reducing household consumption, embedding water efficient practices as well as planning responses to extreme events and co-ordinating activities across companies and sectors. This is all set within the context of seeking to reduce the overall demand for water which is supported. 	The comment is noted. We are pleased that the Council is supportive of this aspect of our plan.
266.4	<ul style="list-style-type: none"> • In terms of the various planning options set out to ensure availability of water supplies during the plan period, it is noted that there is nothing specific that affects the borough of Tunbridge Wells is set out for the period from 2025-2035. However, a number of new options are considered necessary during the 2035-2050 period, including water recycling at the Tunbridge Wells Waste Water Treatment works and the raising of Bewl reservoir by 0.4m, which is also repeated within the 2050-2075 options assessment. It is noted that these are set out within Table 7.3. 	The comment is noted.

Reference	Tunbridge Wells Borough Council feedback	Southern Water response
266.5	<ul style="list-style-type: none"> It is noted that Table 7.15 sets out the options to be either delivered or investigated over the next 10 years. Neither of the above options are detailed within this table. A note is provided below the table which relates to these options for delivery in the eastern area and it is acknowledged that the recycling of water at the Tunbridge Wells Wastewater Treatment works is not considered as a possible option until 2046 and the possible raising of Bewl until 2042. TWBC would welcome further dialogue with Southern Water in regard to both of these issues and any future impact these potential options would have in land use planning and infrastructure planning terms as well as on local residents and communities. 	The comment is noted. We will engage with the Council and other stakeholders as we progress work on these schemes.
266.6	<ul style="list-style-type: none"> It is acknowledged on page 171 of the document, that the next steps once the final Plan has been published will be to carry out further technical work and an assessment of the environmental and social impacts of the possible options. TWBC would welcome dialogue with Southern Water in this regard. 	The comment is noted. We will engage with the Council and other stakeholders as we progress work on these schemes.
266.7	<ul style="list-style-type: none"> It is noted that a key aspiration of the Water Resources Management Plan is the reduction of water consumption and water efficiency as well as the reduction of water from leakages; many of these leakages occur from the company's own infrastructure and cause considerable frustration for residents across the borough at the current time. It is clear that Southern Water need to invest in the infrastructure over the short as well as long term to solve this ongoing problem. TWBC supports this approach and the policies within the Councils Submission Local Plan (October 2021) which provides overarching policies STR5 – Infrastructure and Connectivity and STR7 – Climate Change. Additionally, the Council has is promoting ambitious targets in relation to water efficiency via Draft EN24 – Water Supply, Quality and Conservation, which adopts the optional Technical standards for water efficiency. Further information is provided within the Councils Water Efficiency Background Paper – December 2017. 	The comment is noted.

Reference	Tunbridge Wells Borough Council feedback	Southern Water response
266.8	<p>We are keen to continue to work closely with Southern Water in developing its Water Resources Management Plan and ensuring that there is a sufficient and resilient water supply for the South East, in particular Tunbridge Wells, over the plan period.</p> <p>I trust that this is of assistance.</p>	<p>The comment is noted. We welcome the contribution by the Council and would be pleased to engage and collaborate with the Council as we progress our plan.</p>

30. Feedback by Upper Itchen Initiative and our response

Reference	Response comment	Southern Water response
234.1	<p>Further to my email of the 16th February.</p> <p>Thank you for sending the addendum to the original consultation documents. There is a lot of content which as stated by you is 'nothing new' over what has been put forward before! Our issues noted on the 16th were in no way addressed.</p> <p>I therefore reiterate that the biggest area of concern specifically for the Upper Itchen Initiative and the group of 27 stakeholders I represent is the lack of transparency as to your long term intentions with regard to the Candover abstraction in the Southern Water Drought Plan. Your investment in Havant Thicket Reservoir going forward to 2030 and the additional waters afforded from Portsmouth Water at PWC Source A by 2024 will provide you with more than enough additional water to fully negate the use and any necessary investment in the Candover Abstraction Scheme which was agreed by yourselves and the Environment Agency as a temporary Drought Plan Contingency in 2018. Please inform us in writing, whether our understanding that the time bound Section 20 Agreement still stands and will in no way be reneged on post 2030.</p> <p>I understand that other organisations concerned with these specific issues are equally as concerned as we are and are seeking legal advice and inevitable challenges should we not get a clear and honest response.</p> <p>I look forward to receiving clarity from you over this contentious issue, which must be resolved before any further wider endorsement of your welcomed and comprehensive water resource plan goes forward.</p>	<p>We do understand your concerns but changes in the way that we are now required to plan, in line with the WRPG, including changes to the level of resilience that we need to plan for, changes to the anticipated delivery dates for some schemes, and confirmation from Portsmouth Water that the 9 MI/d supply is no longer available, are all contributory factors to why our intentions have had to develop and change. We had intended to cease all reliance on the Candover and Itchen drought options but early testing has shown that without the continued availability of drought permit or drought order options, we cannot maintain a supply-demand balance when in drought. The Section 20 will remain in place until 2030 and that (as reflected in our current drought plan) still includes provision to consider the sequencing when applying for these options based on which at the time of application could be the least environmentally damaging. We appreciate that your concerns therefore remain and this has not resulted in the change to plan that you would like to see. We continue to work with the EA and stakeholders to both secure our supply obligations in an appropriate way and ensure that if and when needed, our drought permits or drought orders are also appropriate.</p>

31. Feedback by Water Resources West and our response

Reference	Water Resources West feedback	Southern Water response
	<p>Background Water Resources West is one of the five Reginal Planning groups working to develop plans for the water resources needs of our country. We are a group of water companies and other abstracting sectors working together across the North West, the Midlands and the cross-border catchments with Wales. As such, we share a common border with Water Resources South East (WRSE). Water Resources West welcomes the opportunity to engage with this consultation and we hope you find it a helpful contribution to the process of identifying the best outcome for all customers.</p> <p>This response relates only to matters affecting Southern Water as a member of WRSE. We think it is important that each WRMP reflects the distinctive nature of each water company’s supply area and local priorities. We therefore leave matters of detail within Southern Water’s dWRMP for local stakeholders to respond to.</p>	<p>We welcome Water Resources West’s contribution to the consultation. We are committed to working collaboratively with Water Resources West through WRSE.</p> <p>As Water Resources West’s comments mainly relate to the WRSE Reginal Plan they will be covered in the SoR published by WRSE. The comments are reproduced here for completeness.</p>
277.1	<p>Collaborative Working between Water Resources West and Southern Water We wish to thank Southern Water for working collaboratively with us as part of WRSE, through the Regional Coordination Group and the reconciliation process. This reconciliation was the means by which the strategic (i.e. large or inter-regional) schemes could be selected consistently in our Draft Plans, i.e. the same dates and volumes are proposed in both sets of plans. WRW, WRSE and the other regions did work together in reconciliation to develop evidence about which transfers were to be included in the Reginal Plans and the WRMPs of our members as part of Best Value Plans that their boards could assure.</p> <p>The publication of the Draft Plans is a substantial achievement for regional groups and water companies alike. Much work has gone into the Draft Plans, which required close collaboration between water companies in both WRW and WRSE regions through two rounds of reconciliation in 2021 and again in 2022. We want this close collaboration to continue through the next year as we develop our updated Reginal Plans. Together we have an opportunity to build on the lessons learned so far through the</p>	<p>As Water Resources West’s comments mainly relate to the WRSE Reginal Plan they will be covered in the SoR published by WRSE. The comments are reproduced here for completeness.</p>

Reference	Water Resources West feedback	Southern Water response
	<p>process and implement these to improve our approach in future planning rounds. We therefore encourage Southern Water to continue working collaboratively with WRW via existing WRSE links.</p> <p>The regulatory timetable for producing the final plans is relatively tight, especially given that a third round of reconciliation between regions must also be accommodated. Our principal ask of Southern Water and more widely, WRSE, is therefore to work closely with WRW and our member companies to ensure fully consistent selection of transfer schemes can be included in the Statements of Response for WRMPs and Reginal Plans.</p> <p>It is good that the close working on the third reconciliation has already started and some key dates have been agreed between the regions:</p> <ul style="list-style-type: none"> • Model results shared by WRSE with updated transfer scheme selections (16 February 2023) • Checks against WRW/WRSE Reginal Plan consultation feedback and available company WRMP feedback completed and shared (28 February 2023) • Final regional view of selected transfers confirmed (2 March 2023) Check and confirm final transfer selection once UU and Thames WRMP consultations close (24 March2023) <p>Sticking to these dates is important. The WRMP Statements of Response require extensive governance and board assurance with the water companies and companies which provide the source water for transfers cannot even select options until the transfer need is confirmed.</p>	
277.2	<p>Transfers between WRW members and Southern Water There are no direct transfers between WRW and Southern Water; however, there is an SRO enabling water from the South East Strategic Reservoir (SESRO) and/or the Severn to Thames Transfer (STT) in Thames Water’s Swindon and Oxfordshire WRZ to be transferred to Southern Water’s Western Area. As such, the selection of the STT in the WRW plan is, in part to meet the needs of Southern Water. In this context, it is extremely important for Southern Water and WRSE to work together with WRW and stick</p>	<p>As Water Resources West’s comments mainly relate to the WRSE Reginal Plan they will be covered in the SoR published by WRSE. The comments are reproduced here for completeness.</p>

Reference**Water Resources West feedback****Southern Water response**

to the reconciliation timelines highlighted above, to enable rapid and accurate flow of information to be used for effective decision-making towards the final plans.

Our draft WRW Reginal Plan, the WRSE Reginal Plan and Southern Water's WRMP24 Draft Plan also include the selection of the Severn Thames transfer (STT), with supporting options, to meet needs of Affinity Water alongside other companies in the South East. The agreed outcome of reconciliation 2 was to include the selection of the following options in the reconciled plans:

- Severn Thames transfer (STT), 500MI/d interconnector operational in 2050
- STT support from Netheridge, 35MI/d in 2050
- STT support from the North West transfer, 135MI/d in 2060
- STT support from Minworth, not included in reconciled plan

An alternative pathway was also noted in reconciliation, covering the situation should new Thames Valley reservoirs not be available:

- STT 500MI/d interconnector operational in 2040
- STT support from Netheridge, 35MI/d in 2040
- STT support from the North West transfer, 25MI/d in 2048, increasing to 105MI/d in 2050
- STT support from Minworth, 58MI/d in 2050, increasing to 115MI/d in 2055

These selections were reported in a summary document agreed by all regions.

The regions also agreed a change control mechanism, to maintain alignment between plans should new information come to light between completing the reconciliation and finalising the Draft Plans for consultation. The agreed process is documented in 'Inter-regional reconciliation – change control process, Final v1.0', dated 20 July 2022. The change control process document makes reference to immaterial changes that might be identified:

'Immaterial changes would result in unnecessary re-work, diverting

Reference**Water Resources West feedback****Southern Water response**

resource away from finalisation of plans and preparations for high-quality public consultation. Therefore immaterial changes to plans should not be expected to be made, i.e. all regions plans would be expected to remain at the previously reconciled position. This would include a region that might request a change that is subsequently agreed to be immaterial.'

A potential change to STT was identified by WRSE and assessed by WRW following this process. The outcome was recorded on a change control form. WRW assessment was that there was not sufficient time to include this change in any detail in the plan. Both WRW and WRSE agreed at the time, and recorded on the change control form that this change was immaterial. It was therefore agreed that this potential changes would be noted but not included in the plans as per the agreed process.

The selection of STT schemes in the WRW Draft Plan is consistent with the reconciliation and the agreed outcome of the change control:

- Severn Thames transfer (STT), 500Ml/d interconnector operational in 2050
- STT support from Netheridge, 35Ml/d in 2050
- STT support from the North West transfer, 135Ml/d in 2060
- STT support from Minworth, not included in reconciled plan

The precise selection of the STT support options is not clear in the WRSE or Southern Water Draft Plans. The table in Paragraph 6.10 of Technical Annex 2 to the WRSE plan states 130Ml/d of Severn Thames Transfer (STT) (additional resource) in the period 2050 to 2060. Paragraph 6.16 states that 'After 2050 new water sources could be developed and transferred using the STT, including the Minworth water recycling scheme and enhancements to Lake Vyrnwy in Wales. By 2060, it could provide up to 500 million litres of water per day in total to South East England from a combination of sources.' It was not possible to check the detailed planning tables, as they were not published by WRSE at the time of preparing this response in January 2023.

We are concerned that WRSE companies are reporting a selection of STT support options in their preferred plan that is different from the reconciled position. For example, the Southern Water Draft

Reference	Water Resources West feedback	Southern Water response
	<p>does not include the STT clearly in the text of the plan documents. However Table 4 reports the preferred plan selection of the STT 500MI/d pipeline, Netheridge, Vyrnwy 105MI/d with first year of use 2049-50 and Minworth with first year of use 2049-50. These are stated as having a 19% share for Southern Water.</p> <p>For the Statements of Response, we would ask Affinity Water, WRSE and the other WRSE member water companies to present a clear and consistent preferred plan selection of transfer schemes, aligned to the outcome of the third reconciliation that we will undertake.</p>	
277.3	<p>Assessment of Interregional Transfers in the WRSE plan and the Southern Water plan. We have the following comments to make on the how the assessment of inter-regional transfers in the WRSE plan. Because the text of the Southern Water plan does not explain the section of the STT, we assume that Southern Water's assessment is the same as WRSE's and think that it would be helpful for this to be reported consistently.</p>	<p>As Water Resources West's comments mainly relate to the WRSE Reginal Plan, they will be covered in the consultation response document published by WRSE. The comments are reproduced here for completeness.</p>
277.4	<p>Ethical buying, social equity and public value. The WRSE plan highlights this as an important area of the assessment for WRSE, with a note that states 'we believe water transfers or shared infrastructure with other regions should meet the same principles and standards which form the basis of our plan.' We support this ethical stance. WRW's Reginal Plan provides evidence of social wellbeing and public value benefits of the inter-regional transfers, and how equivalent environmental improvements to the WRSE plan are being delivered alongside transfers in WRW's region. United Utilities and Severn Trent, the two providers of water for transfer, show their respective commitments in Responsible Sourcing Principles and a Sustainable Supply Chain Charter.</p>	<p>As Water Resources West's comments mainly relate to the WRSE Reginal Plan, they will be covered in the consultation response document published by WRSE. The comments are reproduced here for completeness.</p>

Reference	Water Resources West feedback	Southern Water response
277.5	<p>Availability of STT support options. The purpose of reconciliation is to confirm the selection of interregional transfer schemes based on the needs of all regions. STT support options could be used to meet needs within WRW region or in WRSE. This is a benefit in terms of the flexible, adaptive nature of the STT system. There is a limit to the total amount of support options and therefore a risk that selected options may not be available. Reconciliation 2 considered this and this constraint was not met.</p> <p>WRSE could have selected more STT support options. We are concerned that this may not be well understood amongst WRSE members. For example, Affinity Water's dWRMP incorrectly states that the number of support schemes for the Severn Thames Transfer were limited to 154MI/d due to Water Resources West's own regional need. No such restriction was applied. WRSE only identified a need for 35MI/d from Netheridge and 135MI/d from Vyrnwy in reconciliation. More could have been requested from Vyrnwy and from Minworth. Going forwards we expect that WRSE will work with us through reconciliation 3, and reflect that into the WRMPs of its members. Once reconciliation has confirmed the availability of resources, this risk should not be used to discount the selection of transfer schemes.</p>	<p>As Water Resources West's comments mainly relate to the WRSE Reginal Plan, they will be covered in the consultation response document published by WRSE. The comments are reproduced here for completeness.</p>
277.6	<p>Operating Costs. The WRSE Draft Plan (paragraph 14.53) states that STT attracts higher costs and carbon emissions than SESRO. Cost comparisons should only be made on a whole-life NPV basis using standard discount rates and it would be helpful to explain this clearly to stakeholders in your plan.</p>	<p>As Water Resources West's comments mainly relate to the WRSE Reginal Plan, they will be covered in the consultation response document published by WRSE. The comments are reproduced here for completeness.</p>
277.7	<p>Adaptability. We are pleased that the STT is recognised as an adaptable scheme, which can provide the additional water needed to meet the environmental ambition challenges. It's not clear from the published information how this adaptability has been assessed and factored into the decision making, e.g. through Best Value Planning metrics. We think it would helpful to explain these benefits and how they have been factored in to your decision making.</p>	<p>As Water Resources West's comments mainly relate to the WRSE Reginal Plan, they will be covered in the consultation response document published by WRSE. The comments are reproduced here for completeness.</p>

Reference	Water Resources West feedback	Southern Water response
277.8	<p>Carbon costs. The WRSE Draft Plan (page 10) states that the STT is a more carbon intensive option than the SESRO option. Transfers are sometimes cited as high carbon because of energy use associated with pumping. However, such pumping in the case of STT would be provided by net zero electricity. This is confirmed by the statement on page 36 of the WRSE plan that says carbon assessments account for decarbonisation of the UK electricity grid. We therefore suggest that, to aid transparency, a clear assessment of the carbon costs for the STT are shown in your plan.</p>	<p>As Water Resources West's comments mainly relate to the WRSE Reginal Plan, they will be covered in the consultation response document published by WRSE. The comments are reproduced here for completeness.</p>
277.9	<p>Climate resilience and drought coherence. Another concern that has been raised by WRSE is about whether droughts could occur in the Midlands and North West at the same time as the South East, and whether this could result in supplies to the South East being restricted in such events. The STT system has been designed to mitigate such risks. The transfer scheme would include contractual provisions in bulk supply agreements to protect the recipient, and this is backed-up by Ofwat powers to regulate bulk supply agreements. Moreover, the water made available to the South East is offset by the development of new sources in the North West. The selection of these sources has been made using the best available assessments of future droughts, taking account of the coherence between the South East, the Midlands and the North West. Drought coherence has been shown to relatively low between the North West and the South East in multiple studies:</p> <ul style="list-style-type: none"> • The Environment Agency's National Framework for Water Resources reports that co-occurrence of the drought reduces rapidly over distance. It's modelling suggests that the combination of the change in the nature of resources, plus meteorological variability means that storage systems are unlikely to experience critical drought risk at the same time once they are separated by more than 100 to 150 km. This suggests that there is scope to increase drought resilience by developing longer transfers, such as the Severn Thames transfer. • Data sets produced by Atkins and commissioned by WRSE and the other four regions for use in Reginal Planning show a relatively low correlation between droughts in the North West 	<p>As Water Resources West's comments mainly relate to the WRSE Reginal Plan, they will be covered in the consultation response document published by WRSE. The comments are reproduced here for completeness.</p>

Reference	Water Resources West feedback	Southern Water response
	<p>and the South East. The correlation co-efficient is typically in the region of 0.5 or less, as shown in Figure 1 below.</p> <ul style="list-style-type: none"> • Work by the UK's Centre for Ecology and Hydrology cited in WRW's Reginal Plan shows that the UK can be divided into North West and South East regions which each experience very different drought characteristics. This shows that when the South East is in an extremely severe drought, very rarely is the North West also in a drought at the same time, and vice-versa. 	
277.10	<p>RAPID's National System Simulation Modelling looked at the impact of the proposed transfers on drought risk (level of service impacts) within United Utilities' and Severn Trent's supply systems. It concluded that operationally there would not be more days in water use restriction observed in those source areas. This means that the scheme is well designed to protect the resilience of the source companies and they would not therefore need to restrict supplies through the transfer relative to the design assumptions factored into WRMP and Reginal Plan deployable output assessments.</p>	<p>As Water Resources West's comments mainly relate to the WRSE Reginal Plan, they will be covered in the consultation response document published by WRSE. The comments are reproduced here for completeness.</p>
277.11	<p>The SESRO reservoir is located in the Thames catchment, as are existing reservoirs that supply Thames Water and others in the South East. A transfer option which uses Vyrnwy reservoir refilled from a catchment nearly 200km away, will always have lower drought risk (measured in terms of event coincidence) than a reservoir refilled from the same catchment as existing sources (which would by definition have 100% drought coincidence). The sources used to support trading in the North West are located even further away than Vyrnwy. STT support using effluent from the Midlands will also have lower drought risk. Experience of the 2022 dry weather event also supports these findings. Whilst conditions in the North West were drier than usual, the level of severity was much lower relative to other parts of the UK.</p>	<p>As Water Resources West's comments mainly relate to the WRSE Reginal Plan, they will be covered in the consultation response document published by WRSE. The comments are reproduced here for completeness.</p>

Reference	Water Resources West feedback	Southern Water response
277.12	<p>Pollution and other operational risks. Some WRSE member companies state in their WRMPs that the SESRO reservoir will be particularly beneficial in the management of operational risks, with pollution cited as an example. There are a variety of operational risks that water resources face. Sources which rely on rivers can be subject to pollution incidents, which could restrict abstractions for certain periods of time. Reservoirs may need to be drawn-down occasionally for reservoir safety works, restricting their output. The STT being a system with a mix of source types: river, reservoir and effluent re-use is particularly resilient to such risks. We think it would be helpful to explain in your plan the resilience benefits that the STT system could provide.</p>	<p>As Water Resources West's comments mainly relate to the WRSE Reginal Plan, they will be covered in the consultation response document published by WRSE. The comments are reproduced here for completeness.</p>
277.13	<p>Optimisation of the River Thames system. There does not appear to be a full assessment in the WRSE Draft Plan for how the River Thames system could be optimised with the STT in a no-SESRO scenario. There are a number of existing reservoirs linked to the Thames which could be optimised to supply Thames Water, Affinity Water and others. The current operational rules (e.g. in the Lower Thames Operating Agreement/Control Diagram) may need to be reviewed with an injection of up to 500MI/d into the supply system from the STT, plus new rules could be required to maximise the effectiveness of onward transfers to other companies. Such an optimisation could lead to improved benefits in your plan. Cross-system optimisation between the Thames operating rules and the STT support options might result in lower utilisation of the STT and lower cost in a no-SESRO scenario. This would be a benefit to all customers.</p>	<p>As Water Resources West's comments mainly relate to the WRSE Reginal Plan, they will be covered in the consultation response document published by WRSE. The comments are reproduced here for completeness.</p>
277.14	<p>Conclusion WRW welcomes the collaborative working we have had with Southern Water and the reflection of that in Southern Water's dWRMP. We are committed to the continuation of the collaborative working for the final WRMP and Reginal Plans. We expect that Southern Water will make a similar commitment.</p>	<p>As Water Resources West's comments mainly relate to the WRSE Reginal Plan, they will be covered in the consultation response document published by WRSE. The comments are reproduced here for completeness.</p>

32. Feedback by Waterscan and our response

Reference	Waterscan feedback	Southern Water response
260.1	<p>1. Methodology 1.1. Our Approach Water Resources Management Plans (WRMPs) are major planning documents. These Plans are significant for guiding the water agenda and setting the tone for water company performance, targets, and priorities over the coming decades (a minimum of 25 years).</p> <p>Given the importance of this work and considering that the previous Plans were published just two years after the market opened in England and Wales, we adopted a careful methodology when approaching these documents. This allowed us to (a) understand the Plans as a whole and (b) to focus on areas of particular interest to Waterscan and our customers.</p> <p>The sections on demand management, nature-based solutions, water neutrality, and partnership work were identified to support and inform our growing Water Strategy Services through which customers are increasingly turning to us for more holistic water stewardship guidance.</p>	<p>We welcome Waterscan’s response to our consultation. Our responses to specific comments are given below.</p>
260.2	<p>1.2. Response Dissemination We have produced general feedback on the dWRMPs as a whole along with specific comments on most of the 16 Plans analysed.</p> <p>We will be sending Waterscan’s general and Wholesaler-specific responses to Defra, Ofwat, and the Environment Agency (EA).</p> <p>The five regional bodies (WRN, WRE, WRSE, WCWR, and WRW) will be sent our general responses and specific responses to the Wholesalers in their respective regions.</p> <p>Wholesalers will be sent our general responses and any additional comments on their specific Plans</p>	<p>The comment is noted.</p>

Reference	Waterscan feedback	Southern Water response
260.3	<p>2. Waterscan Responses to the DWRMPs: General Feedback</p> <p>2.1. Broad Support</p> <p>On the whole, Waterscan supports the efforts made by Wholesalers to meet the supply and demand challenges facing the water industry in the coming decades, even though we believe there is much room for improvement. We support carefully managed investment into improving drought resilience, reducing leakage, and reducing per capita consumption.</p>	<p>We are pleased to note that Waterscan is supportive of our plan overall.</p>
260.4	<p>2.2. Pushing for Greater Ambition</p> <p>2.2.1. Targets</p> <p>We expect Wholesalers to provide a clear, compelling roadmap to meet every target in their WRMP as the current goals are unhelpfully vague. The same applies to the industry-wide commitment to reach net zero operational carbon emissions by 2030.</p> <p>We recognise the temptation to fall back on national targets set by Defra (for example to reduce per capita water consumption by 9% by 2038) as this allows water companies to request funding through PR24 to meet these targets directly. However, it is essential that Wholesalers move more quickly and go further than Government-set targets. This is especially important considering that per capita consumption excludes non-household (NHH) consumption, undermining the incentives and funding available for improving NHH water efficiency.</p> <p>We are concerned about the setting of national targets and the tendency for water companies to default to these targets. There is a troubling lack of transparency over how these national targets were chosen and whether they are suitable or ambitious enough for particular catchments, WRZs and/or water companies.</p> <p>Given the risks that national targets have been watered down and do not push Wholesalers far enough, there needs to be greater clarity and justification around why goals and deadlines have been chosen. This is particularly relevant when percentage decreases still leave excessive leakage rates due to high starting points. For instance, roughly 24% of Thames Water’s supply is currently lost to leakage, but halving this to 12% is still not nearly acceptable.</p>	<p>We are aiming to meet the consumption and leakage reduction targets set by the regulators. We have tested scenarios that go further than the targets. However, aiming for higher target comes with additional deliverability risk. We have considered this in setting our demand reduction targets.</p>

Reference	Waterscan feedback	Southern Water response
	<p>We do not believe that the current targets are challenging enough. Maintaining shockingly high leakage rates disables customer motivation to change behaviours and sends the de facto message that high leakage is both acceptable and the norm (see Section 2.4.).</p>	
260.5	<p>2.2.2. Environmental Action</p> <p>We support interconnected action to tackle climate change, for examples through net carbon neutrality goals and taking better care of local ecologies like sensitive chalk environments. Anglian Water is so far the only water company to voluntarily cap abstraction licences by 2025, which will reduce their abstraction licences by 85%. We urge other Wholesalers to follow Anglian Water's example to strengthen environmental protections and to go beyond mandated targets.</p> <p>A recurring theme across the dWRMPs is operational net zero carbon emissions targets, with deadlines beginning from 2027 for Essex and Suffolk Water and Northumbrian Water. We encourage water companies to measure, disclose, and work to reduce their carbon emissions – as well as their water footprint – through the Carbon Disclosure Project (CDP).</p> <p>We are also keen for Wholesalers to consider and share their position on water neutrality.</p>	<p>We are committed to ensuring all of our abstractions are sustainable. We have a large environmental investigation programme between now and 2027 that will consider the environmental impact of the majority of our groundwater sources. Working with the EA, Natural England and other stakeholders, the evidence gathered during these investigations will be used to support future abstraction licence changes, including licence capping and ensure that the mitigation actions we take can be quantified, targeted and result in genuine environmental benefits.</p>
260.6	<p>2.2.3. Pre-Empty Work</p> <p>Wholesalers need to take anticipatory action before the final WRMPs are published in 2024.</p> <p>For Wholesalers who do not forecast a water deficit before 2040 (like Yorkshire Water, Essex and Suffolk Water, and Northumbrian Water), there needs to be greater emphasis placed on innovation to channel investment into preventive measures and scoping projects that the industry as a whole would benefit from. Such trials could include water neutral partnership work and developing final effluent reuse possibilities.</p>	<p>We have been operating a pilot plant in Hampshire to develop and demonstrate the technical feasibility of our water recycling proposals and will be sharing the outcomes of this with the industry.</p>

Reference	Waterscan feedback	Southern Water response
260.7	<p>2.3. Missing Pieces 2.3.1. Pollution Events Controversial pollution and sewage discharge events must be reduced to as close to zero as possible. We expect pollution events to be a much more explicit focus in the final WRMPs. Failing to adequately acknowledge these events and to provide a transparent, transformative roadmap for how such incidents will be systematically prevented are blatant shortcomings in the current WRMPs. Pollution events affect the availability of water, the health of society, and the ecological status of river catchments. They also cultivate public distrust and cynicism in the water market, sentiments which are incompatible with positively changing consumer behaviour.</p> <p>The toxic consequences of pollution events lead Waterscan to demand that water companies lead a major cultural shift in the water market (see Section 2.4.). The carelessness of Wholesalers dramatically undermines the credibility, integrity, and potential of any efforts to reduce water demand and wastage or to better protect the environment and this must change.</p>	<p>We are committed to managing and protecting raw water quality through our Catchment First Programme. We are developing our WRMP in parallel with our DWMP which sets out our strategy to reduce pollution events</p>
260.8	<p>2.3.2. Partnership Work While we support the consistent emphasis placed on partnership work, there was an overall lack of clarity and specificity over how such partnerships would be set up, run, and assessed.</p> <p>There is significant scope for more intensive, targeted partnership work under the umbrella of nature-based solutions, but it was not made clear how Wholesalers plan to engage with different stakeholders and under what terms.</p> <p>Wholesalers also need to play a greater role in researching the key challenges facing the water industry by working with collectives like the National Leak Research Centre (run by Northumbrian Water), the Water Research Institute at the University of Cardiff, and the Environmental Change Institute at Oxford University.</p>	<p>The comments are noted. We are always happy to work collaboratively with other stakeholders in developing and implementing our plans.</p>

Reference	Waterscan feedback	Southern Water response
260.9	<p>2.3.3. Working with Retailers</p> <p>Wholesalers have an untapped resource in Retailers to drive down NHH water usage. We believe Wholesalers need to develop a mechanism that empowers Retailers to offer this service to NHH customers. This would allow Wholesalers to focus on deliverables that cannot be achieved by third parties like leakage reduction, net zero, meeting household (HH) targets, and reducing pollution incidents.</p>	<p>We have included 12% reduction in non-household demand by 2037-38 compared to 2019-20 in our revised dWRMP24. We will be actively working with the retailers to develop a mechanism in order to achieve this target.</p>
260.10	<p>2.3.4. Impacts on Other Stakeholders</p> <p>There is a serious lack of consideration in the dWRMPs over how the Plans will affect other stakeholders, particularly NHH customers. There is a lack of transparency and clarity around the impact Wholesaler decisions will have on business customers. It is not acceptable to pass problems onto customers.</p> <p>While Wholesalers have a statutory requirement to protect domestic water supplies over NHH properties, this legal caveat should not translate into normal operating practice. This is particularly the case when NHH customers are proactive in managing and reducing their water use. These supply issues are happening now, yet are not analysed in the dWRMPs.</p> <p>Given these issues, we require all Wholesalers to more carefully consider the cascading impacts of their Plans on other stakeholders like NHH customers.</p>	<p>Demand forecast developed for WRMP24 fully takes into account non-household demand. Our methodology for developing non-household demand forecast was described in the dWRMP24 and is included in our revised dWRMP24.</p>

Reference	Waterscan feedback	Southern Water response
260.11	<p>2.3.5. Smart Metering: Plans, Data, and Messaging</p> <p>There is some interesting work planned for smart meter networks from Wholesalers like SES. However, considering that smart metering has now been established as the default position in PR24 (Ofwat are expecting 'full' smart meter penetration by 2035-2045), smart meter extension plans no longer seem so impressive. Moreover, the smart metering plans are often presented as broad commitments without providing the substantial detail that is required to inspire confidence in these plans. Importantly, we need more detail on the kinds of smart meter data that will be available, in what form, from what date, to who, and how – and at what cost – this data will be shared.</p> <p>There is a significant lack of clarity in the messaging around what the smart meter data is expected to achieve. For example, despite the rollout of new meters and water efficiency campaigns, water consumption in the Portsmouth Water area has increased in recent years.</p> <p>This raises questions about the power (or lack thereof) of smart meters to produce long-term behavioural change, meaning that this technology alone should not be relied upon or considered a magic bullet to reduce water consumption.</p> <p>Taking these challenges into account, any smart meter investment should be focused on where there is both opportunity and the need for water reduction. We recommend water companies target the middle sector of the NHH market where a balance between opportunity and customer engagement to reduce water use.</p> <p>This again feeds into Section 2.4. Given the risk that large scale investment in smart metering generates excellent reporting but fails to tackle underlying issues, Wholesalers need to make greater efforts to fundamentally change perceptions of water as a critical resource. Changes to price and/or data alone will not be enough to galvanise the changes needed for the majority of the market.</p>	<p>We plan to replace all existing non-household meters with smart meters by 2035; the vast majority being replaced by 2030. We recognise that a suite of key messages, products and incentives needs to be built around smart meter deployment to maximise their benefit in reducing demand. We will be working closely with the retailers in this regard as we begin to roll out our smart metering programme.</p>

Reference	Waterscan feedback	Southern Water response
260.12	<p>2.4. The Need for a Major Cultural Shift in the Water Market Water companies have a substantial responsibility to lead an urgent, large-scale cultural shift in the water industry. Perceptions are powerful and shape behaviours on all levels, so startling statistics on Wholesaler pollution events and leakage rates create a negative feedback loop that entrenches stagnation and poor practice. The market looks to Wholesalers for leadership in these and other areas. It is jarring that the more water a customer (particularly a NHH customer) uses, the cheaper this vital resource becomes. We expect Wholesalers to be much more proactive in reversing these perverse incentives in the final WRMP24s.</p> <p>Wholesalers need to change the narrative in the water market that propagates, rationalises, and normalises inefficient, irresponsible, and uninspiring performance. Threats to water security, water quality, and water stewardship are very much present in the here and now, so Wholesalers must not allow the current culture to seep into yet another planning cycle.</p>	<p>Our strategy for reducing both household and non-household consumption involves running awareness and education campaigns. This is described in more detail in revised dWRMP24.</p>
260.13	<p>2.5. Inaccessible Plans 2.5.1. Barriers to Engagement On a presentation note, from the perspective of a reader, many of the Plans were extremely dense and formatted in a way that created barriers to close reading or clear understanding.</p> <p>This undermines the quality and integrity of the whole consultation process. The Summary documents often provided a useful overview, but the main documents were largely unwelcoming. For documents very often 100+ pages, it was surprising how often questions were left unanswered at the end. Wholesalers must think more carefully about their audience and the role these Plans play in the consultation process.</p> <p>Some of the more digestible Plans came from Affinity Water, United Utilities, Southern Water, South Staffordshire Water, and Severn Trent Water.</p>	<p>We are pleased to note that our plan was among the ones considered easier to understand. The point about the need for greater clarity is noted though and we have provided clearer narrative in a number of areas in our revised dWRMP24.</p>

Reference	Waterscan feedback	Southern Water response
260.14	<p>3. Waterscan Responses to the DWRMPs: Specific Comments</p> <p>Southern Water’s ‘Catchment First’ programme is a partnership programme with stakeholders including the National Farmers’ Union, the Rivers Trust, the EA, Natural England, and Network Rail. Given the scope, complexity, and potential impact of a scheme that combines these major actors, we would like Southern Water to provide further insight into how this programme was set up, the learnings so far, and the potential for other kinds of partners (like NHH customers) to get involved.</p>	<p>We updated and improved our Catchment First narrative to better illustrate the range of projects we are working on across our catchments and the benefits we expect the programme to deliver.</p>
260.15	<p>Sussex North WRZ is one of the few regions where a Wholesaler has implemented a water neutrality scheme. We would like further detail on how water neutrality was achieved, how ongoing neutrality is measured and monitored, the partnership work this entails, Contingency Plans for what Southern Water will do if this neutral status changes, and plans for the scheme up to 2037 (the earliest end date). We would also be curious to learn more about the lessons Southern Water has learnt from this process (2019-date) and whether it has plans to set up more water neutral resource zones in its region.</p>	<p>It is important to point out that Southern Water did not implement the Water Neutrality Position Statement in Sussex North WRZ. This was issued by Natural England and is unique in its format. Similar Position Statements are not proposed to be implemented elsewhere; however the lessons learned from this model have been shared with key stakeholders and peers across the water industry. We are actively promoting water neutrality principles, as set out in the Waterwise guidance which we continue to support the development of. We are part of the Waterwise Strategic Objective Group helping to promote the approach and build on the foundations laid so far. We would be very happy to share our experience and encourage any interested parties to join our water neutrality group which holds quarterly webinars and issues a monthly newsletter on progress in the Sussex North WRZ. Email waterneutrality@southernwater.co.uk for more information.</p>

33. Feedback by Waterwise and our response

Reference	Waterwise feedback	Southern Water response
167.1	<p>Many thanks for the opportunity to comment on the Draft Plan. We have focussed our response on the demand management elements of the plan.</p> <p>Overall we are very pleased to see significant detail in the Draft Plan and supporting appendices. We believe that the plan, along with Thames Water’s plan, is sector leading in explaining how future demand has been calculated and setting out the demand management options that have been considered. We are also pleased to see reference to the new UK Water Efficiency Strategy to 2030 on p132 of the plan and are grateful for the company’s support in developing it.</p> <p>However, it is very disappointing that Southern Water are deferring the delivery of its sector leading T100 ambition (i.e. reaching an average per capita consumption of 100 l/h/d by 2040) and are instead planning to reach 109l/h/d by 2050. The company indicates that the change partly reflects the impact of covid and partly the company’s level of confidence in delivery. Given this it is therefore crucial that the company includes sufficient short term actions in the Draft Plan to improve the level of confidence in delivery such that it is able to either reconfirm a T100 target date by WRMP29 or explain why it cannot be achieved. Our response below highlights a number of areas which could be considered in addition to those set out in the Draft Plan.</p>	<p>We welcome the feedback by Waterwise and have taken into account for our revised dWRMP24.</p>
167.2	<p>We fully support the ambitious water efficiency options presented including the proposed leaky loo find and fix programme; funding for national and local campaigns; plans to help customers reduce shower length and water wastage; and the planned education programme. On the latter item we suggest linking it to NHH water audits in the same schools and liaising with the Department for Education which is keen to work with water companies on water saving and schools and has pilots in place with several other water companies.</p>	<p>We have revised our water efficiency options and included non-household customers in the programme. We already have a schools visits programme and we will be stepping up our education and awareness campaigns as we look to achieve our ambitious targets.</p>

167.3	<p>We would challenge the company to consider options to double or triple the scale of the proposed home visit programme with only 10,000 home visits planned (per year we believe) in AMP8. Whilst we accept that it makes sense to target the programme on high water users later the programme should also include more typical users. The Programme should also look specifically at audit support to customers in social housing given the cost of living crisis and that could link with the companies learnings from its Water 4All innovation fund project.</p>	<p>We are looking at all aspects of our water efficiency programme to identify areas where we can increase our level of activity.</p>
167.4	<p>We would encourage Southern to also include a campaign to raise awareness on dual flush toilet buttons. Research by ESW has found 20% of people incorrectly identify which is the small flush button in their own homes. Highlighting this topic in home visits is also recommended.</p>	<p>The recommendation is noted and we will incorporate it in our education and awareness campaigns.</p>
167.5	<p>A number of water sector trials across the UK (Sussex North, Affinity, NWL, UU) are finding that flow controllers can reduce consumption by around 30-64 litres per property per day and a number of companies are including larger scale pilots in there Draft Plans. It would be good to see Southern including a programme to fit these devices alongside the meter as part of the metering roll-out or alternatively in all new build homes/on change of occupancy. As well as targeting new build Southern Water could also work with local authorities and housing associations to install them in social housing using the lessons learnt in Sussex North.</p>	<p>Our options to reduce demand include 'innovative solutions'. As part of this, we will not only look at developing solutions and productions in-house but will also adopt initiatives being successfully implemented by other water companies.</p>
167.6	<p>We fully support the proposed smart meter roll-out to HH and NHH properties in AMP8. Our research coupled with the experiences of Anglian and Thames Water to date have shown that smart metering is a game changer when it comes to reducing leakage and engaging with customers on water use and water wastage.</p> <p>The company should consider how it will use the data and insights from smart meters to engage with customers for example through an app or web based portal including funding to develop an appropriate option.</p>	<p>We recognise that a suite of key messages, products and incentives needs to be built around smart meter deployment to maximise their benefit in reducing demand. We will be working closely with partners, both internally and externally, to achieve our water efficiency targets.</p>
167.7	<p>We also support the testing of tariffs to encourage careful water use during peak or dry periods. One model for the tariffs could be in the form of incentives similar to those being offered by energy companies to customers to reduce usage at peak periods.</p>	<p>Our demand management strategy includes the introduction of alternative tariffs from 2030s. We have also aligned our projected savings from government-led initiatives with other WRSE companies.</p>

We are pleased to see that Southern Water recognises the potential contributions to demand reduction from government policies such as water labelling of products and have included this in the baseline forecast.

However on water labelling the Annex 15 incorrectly limits the benefits of mandatory water labelling to washing machines and dishwashers (see p51). The proposed scheme also includes showers, taps and toilets and their omission from Southern Water's analysis results in the forecast savings being far lower than those anticipated by the government and others. The scale of savings linked to water labelling needs to be reviewed for the final plan.

167.8	We are asking all companies to include a budget in their final plans to support/promote the roll-out of water labelling in AMP8 helping to explain to their customers why it is important and how they can use the label. The trial of an incentive scheme could also be considered.	The suggestion is noted and will be considered as we refine our water efficiency strategy.
167.9	There are further opportunities to secure additional savings through more ambitious policy with regards to new build development and retrofit. We are pleased to see the former being considered in the Draft Plan which includes more ambitious building standards in place from the mid-2030's. This timeline could be accelerated based on the roadmap (p117-118) set out in the recent Environment Improvement Plan. We would urge Southern Water to continue to work with Waterwise to advocate for more supportive policies like this.	<p>Our demand management strategy includes home visits with retrofitting of water efficient devices. We also plan to liaise with developers to encourage building of more water efficient home, ideally to 85l/h/d standards.</p> <p>The potential to influence progress within new developments has been recognised during the current AMP and we have established proactive relationships with key LPAs, land promoters and developers to promote water neutrality and water sensitive design in planning policy and developments. This will be strengthened in line with our key priorities during the course of WRMP24 development to drive our commitments forward and we look forward to working closely with Waterwise and other key stakeholders to build on the foundations being laid and make a significant contribution to the targets set in the Environmental Improvement Plan.</p>
167.10	Whilst the annexes do model a number of options to reduce future non-household PWS needs including various 'fund' based options these haven't been included in the Draft Plan and data tables. This is a major omission especially in light of the government's Environment Act target (which includes NHH demand reduction) and Ofwat's planned performance commitment for NHH demand reduction. The lack of a NHH demand reduction programme and associated water saving	Benefits from non-household demand savings were not incorporated in our dWRMP24. We now aim to reduce non-household demand by 12% by 2037-38 compared to 2019-20. The options that we have considered as part of this programme include water audits of non-household customers.

outcomes is acknowledged as a gap in the Draft Plan and will need to be addressed in any revised drafts and in the final plan. We would also urge the company to consider initiating a business water audit programme as currently run by Thames Water which they have found to be one of their most cost effective water saving programmes.

167.11

A portion of the potential deficit in the Southern Water area is driven by future decisions on the type and location of future development. We believe that developments in a region with such a large water deficit and especially in areas where the companies' abstraction licences are being capped or reduced to protect the environment, should be water demand neutral...in much the same way as regulators require new developments in flood prone areas to be flood neutral. This could be achieved through proactive collaborative work with planners and developers at a WRZ or catchment level in these sensitive areas building on lessons learnt in Sussex North. The company should also consider how its developer incentives can be refreshed to help minimise the water demand footprint of new development and Thames Water have a good existing example of this which we know the company is considering.

Southern Water has taken a proactive position in capturing the lessons learnt from the Natural England Position Statement on Water Neutrality, engaging with key stakeholders, LPAs, land promoters and developers. Whilst we do not expect the same approach to be used in other areas, we are actively promoting the water neutrality principles developed by Waterwise and we are providing information on how these could be embedded into policy and corporate strategies to embed water sensitive planning into our region. This is supported by a suite of developer incentives, published in 2023, which support the three tiers of the water neutrality hierarchy and go further by encouraging surface water management too. We are working with Waterwise and other strategic groups to support the development of policy and standards which will enable the development of a water resilient future and we will continue to build on this work to ensure we deliver on our mutual goals.

167.12

At Waterwise, we're committed to driving equity and preventing discrimination at work and in the work we do. A great deal of our impact is delivered through challenging others through consultations such as this to ensure equity, diversity and inclusion has been considered in all policy and planning decisions. We encourage as you develop the final plan to consider the impacts on social wellbeing and how you will understand impacts of decisions, including in the long-term following trade-offs, on the diverse members of the Southern Water customer base.

The suggestion is noted. The impact on the wellbeing of our customers is at the forefront of our planning considerations and will continue to be so.

If you have any questions on our response please do get in touch.

34. Feedback by Wessex Rivers Trust and our response

Reference	Wessex Rivers Trust feedback	Southern Water response
273.1	<p>In responding to the above consultation, Wessex Rivers Trust (Wessex RT) has opted to provide a high-level response rather than addressing the specific consultation questions. As independent champions and defenders of chalk streams in Hampshire and the wider region, we believe that the accessibility of the Plan to your customers and stakeholders needs to be improved and that revisions to the Plan’s content and assumptions are needed.</p> <p>Through the Section 20 scheme, Test & Itchen Catchment Partnership (TICP), and Watercress & Winterbournes Landscape Partnership Project, Wessex RT is working with partners and stakeholders, including Southern Water, to protect and enhance the health of the Rivers Test and Itchen. Considering the challenges facing these rivers, it is vitally important that a wide range of people, notably Southern Water customers, are given the opportunity to clearly understand and comment on Southern Water’s Water Resources Management Plans (WRMP’s).</p>	<p>We welcome Wessex Rivers Trust’s feedback on our plan.</p>
273.2	<p>We are pleased to see ambitious water efficiency and customer demand targets set out in the WRMP. However, in order to achieve these industry-leading targets, customers will need a clear understanding of the relationship between their water usage and the health of our natural environment. The WRMP consultation process is a key avenue for communicating the need for the company to source sustainable alternatives to groundwater abstraction, but at 24 pages in length, and rich in water industry jargon, we question the accessibility of the dWRMP summary document on Southern Water’s website. Whilst high-level reference is made to environmental protection being a key driver behind the proposals set out in the WRMP, the impacts of current water resource management on the environment are not made clear. We believe that highlighting the potential and actual harm of the current approach, together with simpler overall messages, are needed to meaningfully bring Southern Water customers into the decision-making process.</p>	<p>We are pleased that the Trust is supportive of our demand management targets. We have noted the suggestion.</p>

Reference	Wessex Rivers Trust feedback	Southern Water response
273.3	The WRMP also lacks clarity on progress towards the implementation of more sustainable alternatives to groundwater and river based sources, therefore placing the health of the Test and Itchen at risk of continued abstraction during drought. We are concerned that the WRMP summary document states that drought orders and permits are likely to be required until 2040, which conflicts with the timescales set out in the Section 20 scheme, and key objectives in the Chalk Stream Strategy. In our view, the dWRMP needs significant revisions and more clarity so as to ensure that drought orders and permits will not be required up until 2040.	Our plan provides a timeline for implementation of demand management and supply-side options and their associated benefits. The use of drought orders and permits up to 2041 refers to the time by which we plan to achieve resilience to a 1-in-500 year drought across the company. The use of drought orders and permits on the rivers Test and Itchen is governed by our agreement with the EA under Section 20 of the Water Industry Act, 1991. Accordingly, the use of drought permits and orders on the rivers Test and Itchen will stop much earlier.
273.4	We are concerned that Southern Water may consider in-river habitat enhancement work to be an option to facilitate current and/or future abstraction by creating a new baseline from which abstraction levels are set, or to negate the need for ecological mitigation at sites of potential impact from drought permits and orders. The Section 20 compensatory habitat programme currently being delivered by Wessex RT is predicated on an urgency to secure long term, sustainable alternatives which reduce our reliance on groundwater and river sources in the Test and Itchen catchment. This work aims to address historic issues with the morphology of the rivers in question, to increase the quality and abundance of chalk stream habitats and species that are directly impacted by potential drought abstraction, ultimately increasing the overall resilience of Hampshire's chalk stream ecosystems to drought.	There are no plans to maintain or increase the current levels of abstraction from the rivers Test and Itchen. All Environmental Destination scenarios we have considered in the plan seek to either reduce or completely remove abstractions from these chalk streams.
273.5	Whilst the longer term options identified for new sources of water supply to reduce pressure on the Rivers Test and Itchen in the dWRMP would lead to improved sustainability, in common with other environmental organisations, we remain anxious about the timescales and consider there to be significant risks and uncertainties in the WRMP being consulted on. The last year has been a stark reminder to us all that the realities of drought are an urgent threat to our globally significant chalk streams, and we would like to see a Plan which responds more clearly and ambitiously to this challenge in the shorter-term.	We are committed under our Section 20 agreement with the EA to implement a solution as soon as possible to remove the reliance on drought permits and orders on the rivers Test and Itchen as soon as practical.

35. Feedback by WildFish and our response

Reference	WildFish feedback	Southern Water response
268.1	<p>Section 1: Inadequate Consultation</p> <p>The law requires that a consultation should ‘let those who have a potential interest in the subject matter know in clear terms what the proposal is ... telling them enough to enable them to make an intelligent response’ [R v North and East Devon Health Authority, ex parte Coughlan [2001] QB 213; R (on the application of Moseley (in substitution of Stirling Deceased)) (AP) v London Borough of Haringey Supreme Court [2014] UKSC 56].</p> <p>The relevant industry guidance in the Water Resources Planning Guideline (‘the Guideline’) is consistent with the law: ‘You should be transparent in your methods, data, assumptions, and decisions. This is so that customers, stakeholders, regulators and government can understand and comment on your plan’ [Guideline 1.1.1].</p> <p>The Consultation documents, as originally published, do not achieve the requirements of the guidance or the law.</p> <p>On 26th January, solicitors on behalf of Wildfish wrote to Southern Water explaining why the consultation was inadequate and seeking further information and time to respond to that information (see attached).</p> <p>Southern Water replied in the late afternoon of the 16th February. The reply provides some further information but the consultation period ends on 20th February and no additional time to respond is to be allowed. A preliminary assessment of the additional information is that not all of the necessary information has been provided.</p> <p>It is not reasonable for consultees to have so little time to assess and respond to this additional information. We maintain our argument that the consultation is inadequate. This response is therefore only a preliminary response.</p>	<p>We acknowledge that there is a large amount of information in our dWRMP24. This is because it needs to meet and reflect the detail required by the WRPG and the direction set by the Secretary of State. We provided a technical report, more detailed technical annexes and a higher level and more accessible summary consultation document as part of the draft publication.</p> <p>In support of the consultation we held around 40 separate consultation meetings and briefings to regulators elected representatives, catchment stakeholders and the general public in which we could respond to questions and feedback directly. This included meeting with and providing further information to WildFish both during and following the consultation period.</p> <p>The comments regarding the adequacy of the consultation have been taken into account. Where the revised dWRMP24 has been updated, further information has been included to enable a greater and clearer understanding of the issues. We are seeking a further consultation on the revised dWRMP Which will provide additional opportunity for consultees to assess and respond to this information.</p>

Reference	WildFish feedback	Southern Water response
268.2	<p>Section 2: Western Area</p> <p>This response is preliminary only, based on such information as we have. We will wish to respond more fully when we receive all the requested information and have had time to consider it.</p> <p>Southern Water’s dependence on drought order abstraction from the rivers beyond 2027</p> <p>The 2018 objective included in the s.20 agreement was: ‘not to require the Itchen and Candover Drought orders after 2027 and only to require the Test Surface Water Drought Order or Permit after 2027 in extreme drought events (1-in-500-year drought severity).’</p> <p>We understand that that is no longer the objective and that drought orders in excess of that objective are now likely to be required well beyond 2027. On the basis of the information that we have and what we have been told:</p> <ul style="list-style-type: none"> • No significant new supply will be available unless and until the Havant Thicket Reservoir is operational. The most significant amount of planned new supply is also dependent on a water recycling plant and agreement to use it in conjunction with the reservoir. • The earliest date that the full amount of new supply could be available is 2031. It could be significantly later. • There will be a significant and growing lack of supply from 2025 onwards in both a 1-in-500 year and 1:100 year drought. • There is no specific information on lesser droughts. However, this summer there was a 1:10 year drought and drought permit applications were made, but not in the end needed. Even the Normal Year Annual Average figures show a supply deficit from 2025, which increases. This suggests that that there will be supply shortages in relatively frequent droughts. <p>The result is that the extra supply will continue to come from The Candover Brook, Itchen and Test under drought permits or orders until all the proposed new supply associated with the Havant Thicket Reservoir is available.</p> <ul style="list-style-type: none"> • There is no Contingency Plan for the Western Area. 	<p>In the short term we continue to be reliant on drought permits and drought orders to maintain supplies and will follow the agreed process under the Section 20 agreement to use these additional supplies. We remain committed to ceasing the use of these drought permits and drought orders as soon as possible.</p> <p>We explored the impacts to our strategy of the potential for delays to the strategic water resource options in Hampshire through updated investment modelling and sensitivity testing. This is further discussed our revised dWRMP24.</p>

Reference	WildFish feedback	Southern Water response
	<p>Less water in rivers means:</p> <ul style="list-style-type: none"> • Fish are less able to migrate up and down rivers to complete their life cycles. • Pollutants in the water become more concentrated because of the lack of dilution. • Increased sedimentation clogs up rivers because they do not have the energy to remove them. • Reduced shelter and food availability. • Water temperatures increase and oxygen levels decrease. <p>Our rivers and the species which depend upon them are already severely stressed and not resilient to change.</p> <p>Currently only 16% of rivers are classified as healthy according to the Water Framework Directive, and freshwater species are declining quicker than any other. Environment Agency fish counter data for 2022 showed the River Test and Itchen salmon populations are in crisis and failing to meet even the most basic conservation limits. This means low flows and drought, exacerbated by abstraction during these naturally very vulnerable times, will have even greater impacts on them</p>	

Reference	WildFish feedback	Southern Water response
268.3	<p>Uncertainty: The Draft Plan does not deal adequately with uncertainty in relation to the availability of the additional supply proposals.</p> <p>Havant Thicket Reservoir The Plan assumes that the reservoir will be completed and operational in 2029.</p> <p>It is planned that the physical construction of the reservoir will occur 2023 to 2026 and the reservoir will fill with water 2027 to 2029. No information is provided as to how likely it is that those dates will be achieved. We assume that these are the earliest possible completion dates. A range of possible outcomes should be provided including a realistic central estimate. This is not provided.</p> <p>We note that Southern Water have confirmed that weather conditions could impact the 2029 delivery date, particularly if Havant experiences successive wet summers and dry winters.</p> <p>21MI/d Portsmouth Water to Southern Water Transfer The earliest supply benefit Southern Water receives from Havant Thicket reservoir is a 21MI/d transfer. The estimated delivery date varies in the plan but we understand that the earliest date is 2030. A range of possible outcomes should be provided including a realistic central estimate. This is not provided.</p> <p>The availability of this supply is obviously dependent on the availability of the reservoir, but also additional infrastructure such as pipelines. No details of this additional infrastructure and the timing of its consent and construction are provided.</p> <p>90 MI/d Havant Water Transfer Water Recycling Project This proposal is integral to Southern Water's plan and is the main water supply alternative in times of drought, other than drought order abstraction from the rivers. We understand that the earliest that this supply could be available is 2031. A range of possible outcomes should be provided including a realistic central estimate. This is not provided.</p>	<p>We have revised the delivery dates for the Havant Thicket Reservoir and HWTWRP. This is mentioned in the SoR document, detailed in Annex 6 Hampshire Water Transfer and Water Recycling Project Consultation (HWTWRP), with further details in our revised dWRMP24.</p>

Reference	WildFish feedback	Southern Water response
	<p>There appears to be significant uncertainty in relation to the timing of this proposal. The water recycling plant and the associated infrastructure has not been permitted and water recycling is not a familiar process in this country. There is no formal agreement in place between Southern Water and Portsmouth Water that grants Southern permission to recharge Havant Thicket reservoir using the recycled wastewater. We note that Portsmouth Water’s Board stated that:</p> <p>‘[Portsmouth Water] Board gave active support to the continued development of options surrounding Havant Thicket Reservoir with Southern Water, with a cautionary note that securing customer acceptance of recycled water was vital before the physical development of the option could take place.’</p> <p>Conclusion on uncertainty We conclude that there is very considerable uncertainty around the timing of the additional supply proposals related to the reservoir. The earliest dates are 2029 and 2030, but the range of possibilities clearly includes much later dates.</p>	

Reference	WildFish feedback	Southern Water response
268.4	<p>Ensuring that the proposed new supply proposals are delivered as soon as possible:</p> <p>Given that the earliest delivery dates are several years beyond the objective stated in 2018, the importance of ending the reliance on drought permit and order abstraction from the rivers, and the considerable uncertainty relating to the delivery dates, everything possible must be done to deliver these proposals as soon as possible.</p> <p>Southern Water's record on this is not good.</p> <ul style="list-style-type: none"> • The importance of the rivers and the need to cease abstraction below HOL in droughts must be emphasised. • The commitment to all best endeavours must be reiterated. • There must be full and frequent transparency. • Lack of funds must not be used as an excuse for delay. • There must be a fallback plan to deal with the possibility that the HWTWRP, or parts of it, will not be approved. 	<p>We are progressing HWTWRP through the RAPID accelerated gateway process and are looking to implement it as soon as practical in line with our Section 20 agreement with the EA.</p> <p>We will be running sensitivity tests to see the impact of delay or non-delivery of key schemes included HWTWRP and Thames to Southern Transfer on our plan. The results are discussed in our revised dWRMP24.</p>
268.5	<p>The Interim:</p> <p>In the absence of the additional supply associated with the reservoir everything possible must be done to reduce the pressure on the rivers.</p> <p>There is no Contingency Plan for the Western Area or description of how the continuing deficit will be dealt with. This must be provided. Southern Water have admitted that the figures used in their supply and demand datasets are not accurate representations of the water supply that would actually be available in a drought scenario.</p> <p>Stricter demand constraints must be put in place until the extra supply is available.</p> <p>Planning permission for additional development in the Western Area must be made dependent on water neutrality.</p> <p>Small scale supply options which can be brought forward quickly, such as reservoirs for farms, should be investigated and incentivised.</p>	<p>We have developed a contingency plan for the Western area, which is described in our revised dWRMP24.</p> <p>Water neutrality is not a condition that can be imposed by Southern Water. We are required by guidance to ensure that growth is not constrained by water availability. We are already engaging with the planning authorities and developers to advocate the construction of more water efficient homes (ideally built to a specification of 85l/h/d) but it will ultimately be up to the planning authorities to set standards for new developments.</p> <p>Options such as reservoirs for farms are considered as part of the multi sector regional planning work we do with WRSE (water resources in the South East).</p>

Reference	WildFish feedback	Southern Water response
268.6	<p>Western Area – Summary: On the basis of the information that we have:</p> <ul style="list-style-type: none"> • There will be a significant and growing lack of supply from 2025 onwards in both a 1-in-500 year and 1:100 year drought. There will also be supply shortages in relatively frequent droughts. • No significant new supply will be available unless and until the Havant Thicket Reservoir is operational. The most significant amount of planned new supply is also dependent on a water recycling plant and agreement to use it in conjunction with the reservoir. • The earliest date that the full amount of new supply could be available is 2031. It could be significantly later. • The result is that the extra supply needed in times of drought will continue to come from the rivers under drought permits or orders until all the proposed new supply associated with the Havant Thicket Reservoir is available. • The objective set out in the s.20 agreement is no longer the objective and drought orders in excess of that objective are now likely to be required well beyond 2027. • There is no Contingency Plan for the Western Area. 	<p>We have developed a Contingency Plan for the Western area, which is included in our revised dWRMP24.</p> <p>We have carried out an options appraisal process which thoroughly examined alternative options but given the scale of deficit we face in the Western area, there are no quicker alternatives to the HWTWRP.</p> <p>We continue to look for alternatives, however, any options identified will need additional time to develop, at the moment there are no alternatives that can be delivered on the same, or earlier, timeline as the HWTWRP.</p> <p>More details on the options appraisal process can be found at Annex 6 Hampshire Water Transfer and Water Recycling Project Consultation (HWTWRP)</p>
268.7	<p>Section 3: Other Areas and Matters 12-18MI/d Medway Water Recycling Plant (2027) This project would divert treated effluent, currently discharged into the River Medway, back into the Medway works. This water recycling project therefore differs from those proposed in Littlehampton and Havant where the treated effluent is currently discharged into the sea. WildFish would need assurance, from both Southern Water and the Environment Agency, that the proposed Medway water recycling plant would not negatively impact the freshwater ecology, downstream of the works, as a result of this reduction in flow. It is unclear whether the supply benefit is 12MI/d or 18MI/d.</p>	<p>The comment is noted. Environmental studies, surveys and investigations are currently being planned and procured. River modelling has been commissioned to assess the required treatment standard and the effects of discharge to the river.</p> <p>At the current stage of development of the project, a number of parameters are still being assessed, which have influence over the available supply benefit. We have included the most likely DO benefit at this stage.</p>

Reference	WildFish feedback	Southern Water response
268.8	<p>15MI/d Littlehampton Water Recycling Plant (2027) This water recycling plant is due to be built in the Sussex Brighton WRZ. There have been massive changes to the proposed supply sources in this zone since WRMP19. According to Southern Water's WRMP19, there was due to be a desalination plant and water recycling plant in this zone capable of supplying 30MI/d. A desalination plant in Shoreham has been scrapped. It looks increasingly likely that no desalination plant will be built in this zone. It is highly likely that the Littlehampton water recycling plant will be the only additional supply source. In Annex 22 'Central Area Contingency Plan', it highlights that there are risks to the supply benefit and risks to the delivery date of this scheme. In order to reach the supply potential for this area, as planned in Southern's WRMP19, Littlehampton water recycling plant would need to double in supply output. Given the Sussex Brighton WRZ is dependent on other zones, to meet demand in times of extreme drought, the potential delay and reduction supply output to this area is concerning.</p>	<p>The Littlehampton WTW recycling options is to provide water to the Sussex North WRZ.</p> <p>The Sussex Coast desalination option has been withdrawn from our plan and we are looking to make up for the loss of supply for other sources.</p> <p>Our revised strategy for the Central area is discussed in detail in our revised dWRMP24. We continue to work with the EA and stakeholders to both secure our supply obligations in an appropriate way so this will be kept under review.</p>
268.9	<p>120 MI/d Thames Water to Southern Water Transfer (2040) The Thames Water to Southern Water transfer is dependent on the construction of Abingdon Reservoir, also known as South East Strategic Reservoir Option (SESRO). Southern Water's ability to surrender all drought orders and permits by 2040 will be dependent on this massive transfer from Thames. The SESRO transfer will also impact Southern Water's ability to move water eastward from Havant Thicket to help support their Central Area.</p> <p>This includes the 40MI/d transfer from Otterbourne to Pulborough in 2049. It is worrying that Southern Water's plan is highly dependent on this transfer being executed in 2040, particularly as the project isn't under their control. The significant local opposition to the reservoir, should worry Southern Water. It is imperative that Southern Water have a Contingency Plan in place that factors in delays to the reservoir/the reservoir failing to be built.</p>	<p>T2ST is not entirely dependent on SESRO. It can also be supported by Severn Trent to Thames transfer (STT) if needed, although feeding it through SESRO offers more resilience. As mentioned earlier, we will be running sensitivity tests to see the impact of non-delivery or delays in key options, including T2ST. The results of these tests will be used to build resilience to our strategy, as appropriate.</p>

Reference	WildFish feedback	Southern Water response
268.10	<p>Central Area Contingency Plan</p> <p>Southern Water have only made a Contingency Plan for their Central Area. This document was only viewable, in person, at their headquarters. Southern Water are deeply concerned about the water resilience in their Central Area, particularly the Sussex North WRZ which is their least resilient zone across their entire supply network. Sussex North is geographically isolated and entirely dependent on Southern Water's Pulborough (Pulborough) groundwater source. The alternative supply source at Weir Wood has been designated as 'out of supply' due to a deterioration in water quality. Sussex North is dependent on water transfers from Sussex Worthing WRZ, in times of extreme drought, but this transfer is not sufficient to remove the deficit in Sussex North. In order to cancel-out Sussex North's deficit, during periods of extreme drought, additional water will need to be abstracted from North Arundel - located in the Sussex Worthing WRZ. The lack of water resilience in Sussex North is deeply concerning but it was insightful to see the Contingency Plan on improving resilience – which included reactivating Weir Wood reservoir. WildFish champion the proposal launched by Southern Water, with the local planning authority, to establish the UK's first water neutral area around the Pulborough abstraction point.</p>	<p>We restricted publication of our Contingency Plan under the SEMD because of the sensitive operational details around some of our sources and network the plan contains.</p> <p>We are expanding our contingency assessments to cover all of our supply area to include the Eastern and Western areas and this is included in our revised dWRMP24.</p> <p>The contingency measures are primarily intended to provide short term drought resilience whilst we develop larger, more permanent and more resilient solutions.</p>

Reference	WildFish feedback	Southern Water response
268.11	<p>Environmental ambition</p> <p>WildFish supports the basic premise of the environmental ambition process and what it sets out to achieve. That said, it is clear, from the plans that the basis of environmental ambition (to incrementally reduce unsustainable abstractions) has been derailed by water companies and Ofwat due to associated costs. The environment will pay the price for delaying these essential reductions. Southern Water’s planning approach, from 2025 to 2035, will follow ‘low environmental ambition’ meaning the number of abstraction reductions will be limited before 2035. Over this period of time, Southern Water will be responsible for setting environmental ambition in their region. This begins with investigations into the environmental impacts of their abstraction licenses in AMP8 (2025-30). Over AMP9 (2030-35), Southern Water will use this information to identify which licences need to be prioritised and by the end of the period, they will set their environmental destination. Although a small proportion of abstraction licences will be altered, incrementally over this period of time, it won’t be until after 2035 that the vast majority of changes will be implemented.</p> <p>Last summer was a stark reminder that our rivers are at risk to low flows during drought periods. These periods are likely to increase in frequency and severity. There needs to be greater clarity around environmental ambition in order for WildFish to be confident in the process and satisfied that it isn’t just a means for Southern Water to rely on unsustainable abstraction licenses over the next 12 years+.</p> <p>Is there not enough historical data on these rivers to be able to make accurate projections on future flows now?</p> <p>Will our rivers look the same in 12 years?</p> <p>Will investigations need to be reconducted in the mid-2030s?</p> <p>Will all of our rivers still exist in 2035 without reductions in unsustainable abstraction?</p>	<p>We must balance our ability to reduce abstraction against our statutory duty to ensure a resilient supply of water.</p> <p>We are already undertaking further environmental investigations in the Test and Itchen Catchment associated with the Candover Stream, Itchen Wetlands and Southern Damsel fly and consideration of Natural England's CSMG. As outcomes from these investigations we have already proposed to cease abstraction from our Alresford groundwater source within the Candover Catchment in 2031. The purpose of these investigations in which we are working alongside our regulators and catchment stakeholders as part of the steering group, is to provide a robust evidence base on which to characterise the sustainability of our licences and inform future licence changes and any additional mitigations such as habitat enhancement or other catchment management approaches.</p> <p>Our prioritisation approach for our Environmental Destination recognises the significance of the Test and Itchen catchments and, where possible, we have tried to prioritise licence reductions here as early as we can. However, we are already managing large supply deficits introduced by the recent licence changes in 2019. Until our strategic water resource options are delivered and whilst we are still heavily reliant on drought permits and drought orders to maintain supplies, making further licence changes which would continue exacerbate that deficit and prolong that reliance is not sustainable.</p> <p>All of our Environment Destination profiles assume a reduction in normal year abstraction from the Test and Itchen Catchments of 37MI/d from 2040 and a total reduction of between 83MI/d and 160MI/d from both Catchments by 2050. Our Lower Itchen abstraction licences are due for renewal in 2025 and we are also considering alternative environmental scenarios in which the Lower Itchen licences are reduced earlier. We have worked with WRSE to see to what extent licence changes can be brought forward whilst maintaining resilient supplies, recognising that the target date for the Environmental Destination remains 2050.</p>

Reference	WildFish feedback	Southern Water response
	<p>WildFish would like to see Southern Water condense their environmental ambition process and set their environmental destination by the end of AMP8. Reducing all unsustainable abstractions, on chalk streams, should be Southern's priority over the next eight years.</p>	

Reference	WildFish feedback	Southern Water response
268.12	<p>Modelling various drought scenarios</p> <p>WildFish would like to see Southern Water model their supply and demand balance against various drought scenarios. Currently, all modelling is based on a 1-in-500 year drought scenario. On a number of occasions, Southern have also presented their supply and demand balance against a 1:100 drought scenario. Comparing the supply and demand balance between a 1-in-500 year and 1:100 was insightful. We believe Southern Water were the only water company to present this type of comparison. For the examples presented, the difference in supply and demand balance between a 1-in-500 year and 1:100 was minimal. Southern Water were on the brink of submitting drought permits for the Test, Itchen and Arun this summer, which was considered a 1:10 drought, it is therefore important that the public know what would happen in a 1:25, 1:50, 1:100 and 1:200.</p>	<p>Our baseline water supply modelling uses a suite of 400 climatic sequences of rainfall and potential evapotranspiration. These represent artificially generated but plausible alternative realisations of the historical climate between 1950 and 1997. We then additionally considered the impacts of climate change. By using these large data sets we are able to simulate groundwater levels, reservoir storage and river flows and calculate probability statistics on them such as return levels and frequencies.</p> <p>For our supply-demand balance and investment modelling, we have used this underlying data to assess four different planning states. These different planning states encompass normal years, dry years and different levels of drought severity. The investment model seeks to find solutions that work to solve the supply-demand balance across all WRZs, on an annual basis for the four different planning scenarios in that year, and for each of our adaptive plan pathways.</p> <p>When selecting schemes to solve for the future challenges, all four planning scenarios are used to ensure that the solutions selected can meet the anticipated supply-demand deficits across all the scenarios to provide more efficient solutions. The four planning scenarios also provide utilisation profiles across the full planning challenge rather than a utilisation profile focused on the severe drought only.</p> <p>In addition to the four different levels of drought severity, we have combined 5 population growth, 29 climate change and 4 environmental scenarios together in differing combinations. This results in a total of 580 different potential future water requirements, covering the full range of challenges that we face. Whilst these 580 futures are formed from different combinations of the individual scenarios, these individual combinations can give very similar results in terms of their supply-demand balance to other futures. These combinations of discrete forecasts describe the overall supply-demand balances. Whilst each supply-demand balance situation is described by a different combination of discrete forecasts, many of the overall impacts are similar. This means that there are several other combinations of forecasts that could produce a similar supply-demand balance to those described in the plan.</p> <p>So whilst we have not explicitly considered the full range of low return period droughts, the resulting uncertainty in the supply-demand balances</p>

Reference	WildFish feedback	Southern Water response
		<p>we have considered across our adaptive plan ensures that it is robust, resilient, represents a Best Value Plan and complies with guidance. The regional investment modelling work that WRSE carries out looks at four key scenarios (normal year, dry year 1 in 200 and 1 in 500). The impact of droughts such as 1 in 25, 1 in 50 and 1 in 100 will be between the dry year scenario and the 1 in 200 year scenario.</p> <p>We value your feedback and note your points. Your point has not resulted in an amendment to the plan however we will consider your suggestions going forward in order to further explain the position.</p>
268.13	<p>Inaccuracies and errors Southern Water's plan should be immaculate and faultless as it is paid for by their customers, in order for customers to accurately understand the management of water resources, in their area, over the next 25 years.</p> <p>Given the lack of transparency in the document, all of the errors in the plan only make it harder to distinguish what is an error and what is fact.</p> <p>Inaccuracies and errors included: repeated pages, inaccurate graphs, incorrect in-plan referencing and mistakes over completion dates for supply-side projects.</p>	<p>The list of corrections is noted with thanks. We appreciate the feedback and will work to ensure that our revised dWRMP24 is accurate, accessible, and free of errors. We apologise for any inconvenience or misunderstanding that the errors in our dWRMP24 may have caused.</p> <p>We will endeavour to correct all errors in our revised dWRMP24, which we plan to further consult on. We will also work to improve the accessibility of our WRMPs by using plain language and avoiding jargon. We want to ensure that all of our customers can understand our plans and how they affect them.</p>
	<p>WildFish Further communication</p>	<p>Further communication has been received from WildFish following the close of this consultation. We have continued to respond and address points raised outside of this consultation process directly with WildFish.</p>

36. Feedback by Woodmancote Parish Council

Reference	Woodmancote Parish Council feedback	Southern Water response
467	<p>Woodmancote Parish Council response to Southern Water draft Water Resources Management Plan (WRMP)</p> <p>Following the WRSE webinar briefings in 2022 the Council were alerted to the possibility of a new reservoir being built in Blackstone. This area is located in Woodmancote Parish, West Sussex, a rural parish covering an area of some 2090 acres with about 270 dwellings and a population in the region of 500. Clearly the potential of a new reservoir being built of approximately 50-70 hectares in size including the necessary associated infrastructure will cause a large impact on the Parish.</p> <p>This site is now included as an option in the Southern Water draft Resources Management Plan and the Council contacted Southern Water on several occasions to ascertain further information on this proposal. A remote meeting was organized by Southern Water representatives on the 16 December 2022 who explained in further detail the possible plans for a reservoir in Blackstone. We understand that the project was first considered over 20 years ago and is now being considered again as it scored highly against the resilience criteria and customers are in support of storing more water as demand increases. However, further work is still to be done on the suitability of the site and the environmental impacts which we understand will be carried out in the next 5 years.</p> <p>We note that one of the questions in your online consultation states the following: Our plan has identified the need for a new reservoir to store water in West Sussex. Do you think we should investigate this further to establish whether it could provide a new source for the area? Yes or No - Please explain your answer</p>	<p>In AMP8 (2025-30), we will carry out further investigations into the feasibility of this proposed reservoir option and consider the most viable location assuming it is feasible from an engineering, water quality and environmental impact perspective. As part of the process, we will engage with landowners, the local community and stakeholders including the LPA.</p>

Reference**Woodmancote Parish Council feedback****Southern Water response**

In response to this question, the Council understand that the WRMP outlines the actions you need to take to secure a resilient water future for the South East and the potential of building a new reservoir in Blackstone could be one of the ways to support this. We are currently concerned about the environmental impacts related to water supply and this is reflected in the water neutrality issues that have come to light in the Horsham District area in 2022 relating to Pulborough Brooks. However, until the Council has further information on the exact location and plans for the reservoir it is difficult to make any detailed comment on the above question.

However, at this early consultation stage Woodmancote Parish Council would like to note the following points in relation to the potential development of this reservoir:

- Early consultation with residents and the Parish Council is required for such a large development and we would like to know how Southern Water intends to communicate information to the Council and residents;
- Concerns in relation to additional traffic along the small rural roads of Blackstone during construction and following the completion, additional traffic caused by people visiting for leisure purposes;
- Concerns in relation to noise impact;
- Concerns in relation to environmental impacts of such a large-scale development on we assume agricultural land. For example, this could lead to natural habitats being destroyed and a number of protected species would be displaced e.g. water voles, bats and hedgehogs;
- The reservoir could also be visually intrusive – part of Woodmancote Parish is in the South Downs National Park.

We have been advised by Southern Water that they will keep the Council informed of any further developments and we hope that you will continue to engage with us in relation to this matter as the impact of this potential development is of course a concern to the Council and the residents of Woodmancote.

37. Feedback by Telscombe Town Council and our response

Reference	Telscombe Town Council feedback	Southern Water response
002.1	Southern Water are not being ambitious enough and are not meeting the requirements on the public's water usage, including sewage being discharged into the sea.	<p>Our plan aims to meet or exceed the water efficiency targets we have been set by the Government. We are aiming to achieve a PCC of 110l/h/d by 2045 under dry year conditions instead of 2050. We have tested reducing PCC to 98l/h/d by 2045. We also plan to reduce non-household demand by 12% by 2037-38 compared to 2019-20 levels. We plan to reduce leakage by at least 50% by 2050. The option to go further to 62% has also been tested.</p> <p>As part of our demand management strategy, we will be looking to LPAs to implement standards that will require new builds to be more water efficient, ideally with a PCC of 85l/h/d, such that future growth does not lead to an increase in PCC levels.</p> <p>Our WRMP24 is primarily concerned with water supply and to this end we have pursued a number of opportunities for water recycling which will reduced sewage discharges across our region. We continue to explore new opportunities for this, including working with South East Water to develop a water recycling scheme linked to our Peacehaven WTW.</p> <p>More specific consideration of sewage discharges and our plans to tackle storm overflows are available on our website and as part of our DWMP.</p>

38. Feedback by Everflow and our response

Reference	Response comment	Southern Water response
311.1	<p>Introduction This is the first time that retailers have been through a full WRMP planning cycle since the market opened in 2017, so we embrace the opportunity to share our views on these Draft Plans, and are open to further discussions on how we can help bring these to life with our customers.</p> <p>The Draft Plans show that meeting water demand over the next 25 years is challenging, due to climate change, population growth and rightly rising environmental standards. The cost of living crisis is another restriction under which water companies must plan, and reducing demand for water is an important way to keep water prices low.</p> <p>As a national, un-associated retailer for businesses, we have taken part in multiple workshops, consultations and trials with regulators, regional water resources groups and collaborative industry groups on how to reduce demand for water from businesses.</p>	<p>The comment on our dWRMP24 is noted and we welcome the contribution to our consultation. Our WRMP24 factors in climate change, population growth and environmental standards when planning for future supply to meet future demand; whilst ensuring bills are affordable to our customers.</p>
311.2	<p>Opportunities in the business market Business (non-household) customers use around 30% of water supplies, but water efficiency work has focussed heavily on household rather than non-household customers over recent decades. It was expected that the opening of the business retail market would stimulate water efficiency delivery but neither customers nor retailers have been incentivised sufficiently for this to happen.</p> <p>Some structural barriers have contributed to this, and we helped develop the Retailer Wholesaler Group’s plan, which proposes regulatory changes to provide the industry with targets, incentives and funding for water-saving interventions.</p> <p>We were pleased to see that Defra announced the 9% demand reduction target for NHHs. We would like to understand further how this will be applied in practice, particularly in companies’ WRMPs. For example, will certain areas of England take on a</p>	<p>We have included 12% reduction in non-household demand by 2037-38 compared to 2019-20 in our revised dWRMP24. We will be actively working with the retailers to develop a mechanism in order to achieve this target.</p>

Reference	Response comment	Southern Water response
	<p>greater share of water saving than others? It does not seem fair that already water stressed areas with high demand are asked to save more than others – particularly with Ofwat’s encouragement of water trading between regions.</p>	
<p>311.3</p>	<p>Overview of dWRMPs Regional and wholesaler water resource management plans do not adequately consider the potential of the NHH market to deliver water demand reduction. Some general commitments to the NHH market are included, e.g., retrofitting NHHs with smart meters alongside households over 10 to 15 year periods, but we would like to see more details about NHH smart metering and water efficiency plans before final WRMPs.</p> <p>Echoing MOSL’s point from their WRMPs response, several WRMPs barely mention the NHH market in the main document, and in some cases, important NHH information is buried in appendices. The NHH market consumes 30% of water in England, so it’s essential to include an overview of how it features in your plans in the main document. Business customers’ involvement is essential to the industry meeting its demand reduction targets, but they have low awareness of water scarcity threats and how they could affect their businesses. Business customer awareness also feeds into general household awareness and employers are in a prime position to influence their employees’ behaviour.</p>	<p>We recognise the role that smart meters can play in reducing demand in conjunction with other measures. As part of our strategy to reduce non-household demand, we plan to replace the vast majority of our existing meters with smart meters by 2030, with larger meters being replaced by 2035.</p>
<p>311.4</p>	<p>Smart meters This market is ideally placed to support overall demand reduction targets, which will avoid investing in expensive and environmentally destructive new infrastructure. Our market consumes a third of potable water in England and Wales and lends itself to very targeted interventions. For example, 3% of NHH customers use 72% of water in the NHH market – or 20% of all consumption. Just 11,000 large meters and 152,000 medium-sized meters could be targeted for smart meters to achieve 80% of the impact of fixing leaks promptly and reducing consumption.</p>	

Reference	Response comment	Southern Water response
	<p>Recent research by Artesia for MOSL found a strong business case for rolling out smart meters to NHH customers alongside domestic customers (e.g., by geographic area rather than prioritising one over the other). It also recommended companies without large-scale meter investment programmes would benefit from replacing or upgrading selected NHH customers' meters, particularly the largest customers and/or where businesses are close together.</p> <p>Ensuring that customers' usage is visible to water providers and customers themselves, and that water scarcity situations are proactively communicated and linked to usage, is key to getting customers to understand their potential contribution towards reducing water scarcity and protecting the environment. We therefore urge wholesalers to align with the national NHH metering strategy being developed by MOSL.</p> <p>From our review of WRMPs, many wholesalers are intending to roll out smart meters from 2025 or have already started. However, there are no set dates for when every business will have one. Wholesalers that have already rolled out smart meters identified around 25% of the water being used by NHH customers is continuous flow – a large proportion of this could be leakage and/or wastage. Smart meters enable leaks to be detected much quicker so that wasted water can be minimised.</p> <p>One million smaller NHH customers use water in a very similar way to households (toilets, sinks, etc.) and have similar meter sizes and usage.</p> <p>We would like clarity on how many smart meters (AMI not AMR) you intend to deploy in AMP8 and beyond, including visibility for retailers on when and where they will be rolled out, to avoid duplication of effort or customers paying for loggers when they don't need to.</p>	

Reference	Response comment	Southern Water response
311.5	<p>Data sharing</p> <p>We would like wholesalers to align with the national NHH metering strategy position on data sharing. Proactive logging and continuous flow/high usage alerts for customers via retailers are also key to obtaining 'in the moment' conversations about water efficiency which NHH customers are more likely to engage with, so smart data should be shared with the customers' retailer.</p> <p>We would also urge wholesalers to pool their NHH benchmarking data (ideally nationally) and share this with retailers operating in their area, so that the benefits of big data can be realised and result in better targeting of water efficiency and leakage services by retailers.</p>	The suggestion is noted.
311.6	<p>Water saving</p> <p>National research by the RWG Water Efficiency sub-group steering group has shown that customer incentives to increase their water efficiency are insufficient and the savings required to achieve the customers' expected return on investment time unrealistic. The initial (time and money) investment required to achieve water efficiency relative to the size of their bill is a particular barrier to SME customers, which make up the majority of the NHH market.</p> <p>Wholesalers are in a position to apply for funding which they can use to incentivise retailers or collaborate with us on delivering water efficiency. A collaborative approach is important to avoid undermining competition and to increase customer uptake. There is low demand for water efficiency services among businesses - even when they are offered for 'free' to the non-household customer. Retailers' relationships with their customers are key to improving this and communications by wholesalers and retailers must be coordinated.</p> <p>We would like more detail on how water efficiency services will be offered to different categories of NHH customers.</p> <p>We want to be able to offer water efficiency services consistently nationwide so that water saving is simpler for NHHs to engage with. We would prefer a nation-wide approach to demand reduction so that multi-site</p>	We have included the costs of reducing non-household demand in our WRMP24 and PR24 and will hope for this initiatives to be funded through the Price Review process.

Reference	Response comment	Southern Water response
	<p>customers have clarity about the services and funding and/or incentives available to them. This is another reason why wholesalers need to focus their efforts on incentivising and collaborating with retailers.</p>	

Reference	Response comment	Southern Water response
311.7	<p>Collaboration We would like to see true collaboration between wholesalers and business retailers that delivers value for customers, as well as environmental and water security benefits.</p> <p>In a recent trial with a large water wholesaler targeting customers with continuous flows, we demonstrated the value of our enhanced data and relationship management by more than tripling their usual engagement rate. However, it's important that adequate funding is transferred to retailers to cover such marketing, service provision (e.g., leak detection or water efficiency audits, products etc) and/or contact list costs, at a market rate which recognises the quality of the data they've invested in improving and enhancing since market opening.</p> <p>Funding also needs to reflect actual costs of engaging and delivering such services. Wholesaler water efficiency incentive schemes for retailers to date have been based on per litre usage reductions, and there are inadequate commercial retailer incentives. Due to low business engagement and 1 National Research by RWG Water Efficiency Sub-Group Steering Group, 2021 willingness to pay for leakage and water efficiency services, retailers therefore have not been able to cover the costs of water efficiency services and delivering them.</p> <p>While not all retailers will prioritise providing water efficiency services for their customers, those that do should not be prevented from providing competitive services and innovations that benefit customers and the retail market, as well as the environment and security of supply. Being kept informed and involved in communications between wholesalers and customers is also crucial to maintaining great customer service.</p> <p>We would echo Waterwise's request last year for a wholesaler commitment to greater collaboration with retailers in the plan, and a more detailed plan for how they will deliver demand reduction in the NHH sector. This could involve:</p> <ul style="list-style-type: none"> • Technical support with abstraction options • Providing a sterner 'police' type function when customers don't respond to retailers about potential leaks and over 	<p>As we roll out our smart metering programme, we will be proactively engaging with retailers and other stakeholders to develop a mechanism for knowledge sharing and incentivising demand reduction in the non-household sector.</p>

Reference	Response comment	Southern Water response
	<p>consumption (e.g., issuing leak notices and showing local connections with water deficits/risks to supply or the environment)</p> <ul style="list-style-type: none"> • Sharing smart meter and logger data • Sharing plans for smart meter/logger roll outs • Offering white label services (as most wholesalers already do for meter reading) for leak detection and repair, water efficiency site surveys and installing water efficiency products. <p>However, we believe a competitive market for these services would serve customers best, so do not think that wholesalers should offer these directly to NHH customers.</p>	

Reference	Response comment	Southern Water response
311.8	<p>Drought plans</p> <p>Retaining TUBs and NEUBs for peak demand or droughts is regrettable for our customers, but if they must be used, we ask that the plan details how retailers will be involved in customer communications around these. Ideally communication protocols should be agreed in advance so that they can be sent out in a timely and organised way.</p>	<p>The use of TUBs and NEUBs balances the need to invest significant amounts in new water sources, which otherwise would not be needed very often, but would drive up customers' bills. We have assumed that utilisation of these measures will continue in line with our Drought Plan, though we have also considered sensitivity scenario in which these measures were excluded.</p> <p>Our communications plan for these drought measures is set out as part of our Drought Plan and it is regularly renewed and consulted upon every five years. Annex 25 of our revised dWRMP24 includes a lessons learned review of all our drought actions from the 2022 drought including the effectiveness of our communications and the TUBs we imposed.</p>
311.9	<p>In summary, we ask that all wholesalers:</p> <ul style="list-style-type: none"> • Specifically detail their plans for NHH metering and water efficiency • Align with MOSL led national approaches • Think about how to incentivise retailers to deliver water efficiency or collaborate. <p>We look forward to working with you on delivering greater water saving in the NHH sector in the coming years</p>	<p>Our revised dWRMP24 will contain details of our smart metering strategy and measures to reduce non-household demand.</p>