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Drought Plan 2022

Appendix M WRMP24 Environmental Assessment Updates

March 2025

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1 INTRODUCTION

The process of the Water Resource Management Plan 2019 (WRMP19) option development included a review of as many potential solutions as possible (the 'unconstrained list' of options) to identify 'feasible' (constrained) options that can be used to maintain the supply demand balance throughout the WRMP planning horizon. These 'feasible' options are then reviewed to identify 'preferred' options in terms of financial, environmental and social aspects which are put forward into the final WRMP.

As part of the WRMP19 process, we undertook a Strategic Environmental Assessment (SEA) and a Habitats Regulations Assessment (HRA) on each of our feasible options. These assessments are provided as Appendix K and Appendix J respectively as part of our Final Drought Plan.

Furthermore, a summary of the screening exercise to comply with the Habitats Directive and which informed selection of our Drought Permit / Drought Order options (from the unconstrained list to the feasible options list), is provided in Appendix F of the Final Drought Plan.

Since the publication of our Drought Plan 2022, we have published our Final WRMP (fWRMP24). For the development of the fWRMP24, we updated our SEA and HRA. Our regulators have requested that we update our current Drought Plan 2022 Appendices with the latest SEA and HRA assessments and make any updates to our Drought Plan if necessary.

This addendum to the Drought Plan 2022 sets out the following information:

- A summary of the WRMP19 drought plan options
- A summary of the WRMP19 SEA and HRA findings and how that informed our current Drought Plan
- A summary of the WRMP24 SEA and HRA findings and how / if they differ from the WRMP19 assessments
- Any changes to be made to our current Drought Plan as a result of these updated environmental assessments.

2 WRMP19 DROUGHT MANAGEMENT OPTIONS

Our WRMP19 'unconstrained' options list included 16 drought management related options; voluntary restraint and leakage action, TUBs, NEUBs, six drought permits, Aquifer Storage Recharge (ASR), increasing the drought yield of sources, lowering borehole pumps, recommissioning two unused sources, commissioning unused Portsmouth Water boreholes, and commissioning private/commercial boreholes.

During the Options Appraisal screening process within WRMP19, twelve of these were screened out, leaving the four remaining feasible options as described in Table 1.

Table 1 WRMP19 Feasible Drought Options

Demand side drought management options	
Voluntary restraint & leakage action	Enhanced public awareness campaigns on dry year versus drought situation as triggered by emergent conditions. This includes advice on benefits of mild restraint to households and non-households (less extreme than drought restraint appeals) - Target residents, tourists, and non-household customers. Increase leak detection activity and increase priority of repairing leaks (accelerate response time and reduce leak volume threshold to respond to, i.e. fix more, smaller leaks). Combined impact expected to reduce demand by 2%.
Mandatory restraint – TUBs	Implemented in a 1 in 20 year drought event. This option would prohibit all activities (as listed in the legislation) at the same time in the interests of clarity of messages

	and equitable application of restrictions to customers. Expected to deliver a 5 % reduction in overall distribution input.
Mandatory commercial restraint – NEUBs	Implemented in a 1 in 80 year drought event. This applies to commercial uses and further domestic restrictions (beyond those imposed by the Temporary Use Ban and as listed in the Drought Direction 2011). This option would require a Drought Order and would be effective for the remaining duration of the drought. Expected to deliver an additional 3-5% reduction in overall distribution input.
Supply side drought management option	
Drought Permit: Source S	Implemented in a 1 in 125 year drought event. When Swanbourne Lake is already dry due to natural causes (i.e not abstraction), increase abstraction from the licensed limit of 2.5Ml/d to 11.5 Ml/d. This would require a drought permit. Under normal dry conditions abstraction from Source S is limited due to its assumed impact on the SSSI (but artificial) Swanbourne Lake (at Arundel).

3 WRMP19 ENVIRONMENTAL ASSESSMENTS

This section provides a summary of the SEA and HRA findings for the feasible drought management options.

3.1 WRMP19 Habitats Regulations Assessment

A HRA determines whether there will be any 'likely significant effects' (LSE) on any European sites as a result of a plan's implementation (either on its own or 'in combination' with other plans or projects) and, if so, whether these effects will result in any adverse effects on the integrity of those sites.

The HRA assessed the individual and combined impacts of all feasible options and concluded that the WRMP19 has **no adverse effects, alone or in combination, on any European sites** taking into account established scheme-level mitigation and avoidance measures that will clearly be available, achievable and likely to be effective.

Particular assessment of the Source S drought permit indicated that as there is an absence of impact pathways, increased abstraction would not impact either groundwater terrestrial ecosystems or surface water bodies of European sites as it is not within the catchment of any of these sites, and there are no water resource sensitive European sites within 5km of the borehole. It is noted that for the most proximal identified European Sites that there will be 'no effects' as opposed to 'no likely significant effects' thus concluding there will be no possibility of 'in combination' effects.

3.1.1 HRA Stage 1 screening for Drought Plan

As we undertook a HRA and SEA for our WRMP19 which included the Source S Drought Permit, we did not initially carry out a separate HRA as part of our current Drought Plan. However, following consultation on the draft Drought Plan, Natural England required a HRA Stage 1 screening to be undertaken on all of our **unconstrained drought permit/drought order options** prior to its final publication.

This screening process considered whether the options affected any RAMSAR, SSSI, SAC or SPA sites, or had any potential WFD impacts. The process also identified whether the options had minimum residual flows (MRF's) in place, and provided overall conclusions for the assessment. The results are presented in Appendix F of our final Drought Plan and it was concluded that our Source S drought permit was the most feasible, with 'amber' potential impacts on a SSSI.

3.2 WRMP19 Strategic Environmental Assessment

The SEA assessed each of the feasible options individually, and then the combined impacts of the options against 10 SEA objectives, using the assessment scale in Figure 1.

Score	Description	Symbol
Significant Positive Effect	Significant positive effect of the Water Resources Management Plan option on this objective	++
Minor Positive Effect	Positive effect of the Water Resources Management Plan option on this objective	+
Neutral	Overall neutral effect of the Water Resources Management Plan option on this objective	0
Minor Negative Effect	Negative effect of the Water Resources Management Plan option on this objective	-
Significant Negative Effect	Significant negative effect of the Water Resources Management Plan option on this objective	--
No Relationship	There is no clear relationship between the Water Resources Management Plan option and the achievement of the objective or the relationship is negligible.	~
Uncertain	The Water Resources Management Plan option has an uncertain relationship to the objective or the relationship is dependent on the way in which the aspect is managed. In addition, insufficient information may be available to enable an assessment to be made.	?
Mixed Effect	Mixed positive and negative effect of the Water Resources Management Plan option on this objective	+/-

Figure 1 SEA objectives (WRMP19)

The SEA concluded that the majority of our options were assessed as having neutral, positive, or significantly positive effects on the environment. Two of the options were assessed as having uncertain minor negative effects on certain SEA objectives, as detailed in Table 2.

Table 2 WRMP19 options with SEA uncertain minor negative effects

Drought Management Option	SEA Objective	Explanation
Leakage Action	**7. Human Health** (Uncertain minor negative effects)	The Active Leakage Control operation, leakage investigation and reduction activity is expected to be minor and within short duration. Notwithstanding, the cumulative impacts of noise/vibration disturbance and air quality impacts (dust) resulting from excavation and the transportation of equipment/material may adversely affect human health depending on the scale, duration, and proximity of the works to sensitive receptors.
Source S Drought Permit	**1. Biodiversity** (Uncertain minor negative effects)	Swanbourne Lake which forms part of Arundel Park SSSI naturally dries out during severe drought conditions which is expected to precede operation of the scheme. The EA have already concluded that impacts from abstraction on an 'already' dry lake may be insignificant which suggests increased abstraction may have a negligible impact on Swanbourne Lake, although potential effects on Arundel Park SSSI remain uncertain without further investigations (modelling).

		The extent of increased groundwater abstraction is not currently known beyond Swanbourne Lake and Arundel Park; consequently, other designated and non-designated ecological receptors proximate to the scheme may also be adversely impacted.
Source S Drought Permit	**3. Water quantity and quality** (Uncertain minor negative effects)	The increased abstraction limit may potentially exacerbate the effect of the drought on the local water system regarding supply and recovery as the subterranean chalk springs supply groundwater to proximate waterbodies. This option has therefore, been assessed as having a minor negative effect on SEA Objective 3, although some uncertainty remains until further investigations (modelling) is conducted.

As reported in the SEA, we completed a comprehensive investigation into "Post Implementation Monitoring" (PIM) of Habitats Directive sites and an investigation into "Water Framework Directive" (WFD) catchments at risk. The investigations, and resulting actions meant that no further modifications driven by either of these two drivers were expected and were not linked to the Source S drought permit or other drought management options.

4 WRMP24 ENVIRONMENTAL ASSESSMENTS

For the WRMP24 we carried out six different environmental assessments, including an SEA[1] and HRA[2]. In contrast to the WRMP19 assessments and to ensure we provided an integrated assessment of the plan, our process was grounded on using the SEA as the umbrella process under which the parallel environmental assessments took place, as advised in the relevant national environmental assessment guidance.

A bespoke SEA framework was therefore developed for WRMP24 which consisted of 13 objectives – including and building on all of the objectives from WRMP19 and formulated to incorporate the findings of the other various technical environmental assessments, **including the HRA**.

4.1 WRMP24 Habitats Regulation Assessment

A Stage 1 'screening' assessment was undertaken on the Source S Drought Permit as part of the WRMP24 HRA process. It was concluded that there would be no likely significant effects on European sites from implementation of this option as no feasible impact pathways exist as the result of increased abstraction from an existing borehole. It is not predicted that there would be impacts alone or in-combination as a result of abstraction.

This is the same conclusion as from the WRMP19 HRA which therefore means that there are no changes required to the current Drought Plan and/or Source S Drought Permit scheme as a result of the updated HRA.

[1] APPENDIX 1D – STRATEGIC ENVIRONMENTAL ASSESSMENT. FINAL WATER RESOURCES MANAGEMENT PLAN 2024. October 2024. https://www.portsmouthwater.co.uk/wp-content/uploads/2024/10/1D-fWRMP-SEA-Report-v7.0_published_final.pdf

[2] APPENDIX 1D – HABITAT REGULATIONS ASSESSMENT. FINAL WATER RESOURCES MANAGEMENT PLAN 2024. October 2024. https://www.portsmouthwater.co.uk/wp-content/uploads/2024/10/1D-fWRMP24-App-HRA_V5.0_published_final.pdf

4.2 WRMP24 Strategic Environmental Assessment

Our WRMP24 SEA consists of 13 objectives and identifies the likely environmental impacts of our feasible options, including the existing Source S Drought Permit. A different assessment scale was used for WRMP24 compared to WRMP19 - the score of 'Uncertain' has been removed which enforces a decision of significance of effect or neutral. Furthermore there are now three steps of significance for both positive or negative effects where previously there were two. This has led to a more complete SEA that attempts to make conclusive decisions rather than remaining uncertain on effects. The scoring system applied in the SEA for WRMP24 can be seen below in Figure 2.

Assessment Scale	Assessment Category	Significance of Effect
+++	Major beneficial	Significant
++	Moderate beneficial	
+	Slight beneficial	Not Significant
0	Neutral or no obvious effect	
-	Slight adverse	
--	Moderate adverse	Significant
---	Major adverse	

Figure 2 Scoring system applied for the WRMP24 SEA

The operation of Source S drought permit was assessed as having a range of 'neutral', 'slight' or 'moderate' **beneficial** effects as well as four 'slight' and two 'moderate' **adverse** effects.

The four 'slight' adverse effects were related to the additional pumping and treatment requirements leading to emissions, and to the additional pressures on remaining resources. It is also anticipated there may be potentially 'slight' adverse effects to archaeological remains from waterlogging due to fluctuating water tables. Although these were not described within the WRMP19 SEA, they are classed as not significant (slight) adverse effects for WRMP24 because they are anticipated to be local in scale, short term and temporary.

The two 'moderate' **adverse** effects are found for Objective 1 (Biodiversity) and Objective 3 (Water quantity and quality), which aligns with the two Objectives found to have 'minor negative' effects in the WRMP19 assessments. The differences between the WRMP19 and WRMP24 assessments for these two Objectives are detailed in Table 3.

Table 3 Adverse effects for Source S drought permit – a comparison between WRMP19 and WRMP24 assessments

SEA Objective	WRMP19 assessment	WRMP24 assessment	Explanation
1. Biodiversity	**Uncertain minor negative effects**	**Moderate adverse effects**	The Environmental Assessment Report (EAR) was completed for the drought permit in 2022 and records the likely impacts on designated sites as up to major adverse for Arundel Park SSSI (unit 2) and for Arun Valley Watersfield to Arundel LWS. This effect is considered to be of regional scale, short term and temporary to the drought period. Subsequently, Natural England requested that a Stage 2 Appropriate Assessment was carried out for Arun Valley SPA, Arun Valley SAC and Arun Valley Ramsar site. Prior to the AA, further work was carried out to understand the potential impacts and it was found that the risk of abstraction changes at Source S had **negligible** impacts on groundwater levels or spring flows at these designated sites. As such, the option

			was not progressed to Level 2 Appropriate Assessment and ruled out of the in-combination assessment. **In conclusion, the WRMP24 SEA/HRA shows no further effects to those found in WRMP19.**
3. Water quantity and quality	**Uncertain minor negative effects**	**Moderate adverse effects**	The updated SEA concluded that there may potentially be a short term and temporary effect at a local scale due to the additional abstraction of groundwater. The WFD assessment concluded that there is a possible risk of WFD status deterioration (Chichester Chalk groundwater body). **In conclusion, the WRMP24/HRA shows no further effects to those found in WRMP19, other than the possible risk of WFD status deterioration.**

4.3 Other Environmental Assessments

As previously identified, the WRMP19 assessments included the SEA and HRA, whereas the WRMP24 environmental assessments built on this to include an **additional** four different environmental assessments, but using the SEA as the umbrella process under which the parallel environmental assessments listed below took place:

- Water Framework Directive (WFD) Assessment
- Biodiversity Net Gain (BNG) Assessment
- Natural Capital (NC) Assessment
- Invasive Non-Native Species (INNS) Assessment

In addition, further assessment took place in relation to the potential for effects on SSSIs, as well as a cultural heritage assets via a Heritage Impact Assessment (HIA) report.

The following points provide a summary of each of these and how/if they impact on any drought management actions.

- **WFD Assessment** - Source S Drought permit was subject to a level 2 WFD assessment due to WFD non-compliance. The assessment concluded that there was a **medium risk for the temporary increased abstraction** from the Chichester Chalk to be WFD non-compliant and therefore**, further assessment is required to ensure that the additional abstraction does not negatively impact under the quantitative GWDTE, dependent surface water body and water balance tests.**

- **BNG, NC, INNS Assessments** – all concluded that the use of the Source S Drought Permit is scoped out of the assessments, because it does not result in a change of land use, it does not materially harm the natural capital stocks of the region, and the risk of spreading INNS is minimal.

- **SSSI Assessment –** this assessment reported that Source S Drought Permit has the potential to give rise to adverse effects on Arundel Park SSSI however, the drought permit is supported by an Environmental Assessment Report (EAR) which includes a comprehensive monitoring programme designed to better understand the potential for impacts and mitigation. This includes specific actions to ensure adverse effects on Arundel Park SSSI are avoided. Potential adverse effects on Duncton to Bignor Escarpment were also identified however, the EAR noted that whilst the chalk aquifer acts as a potential pathway, the SSSI was outside the zone of influence. It was therefore considered that

mitigation and monitoring set out by the Source S Drought Permit EAR was sufficient in identifying potential impacts and implications of groundwater levels changes to environmental receptors.

- **HIA** - it was recommended that a **further detailed assessment of receptors and impacts** was undertaken. This may include a more detailed desktop assessment covering the receptors identified by future modelling and may also include on site assessments following guidance provided by Historic England on the preservation of archaeological remains.

The next section sets out the conclusions and recommendations for further work.

5 CONCLUSIONS AND FORWARD LOOK

5.1 Conclusions

In conclusion, our WRMP24 SEA and HRA assessments have not identified any additional adverse effects from drought options other than the possible risk of WFD status deterioration related to our Source S drought permit and the requirement for further work for the HIA. The table below shows the specific next steps alongside our response and any required changes to the drought plan.

Table 4 Further work and implications for the 2022 drought plan

Further work	PRT comments	Implications for the 2022 Drought Plan
Carry out further WFD Assessment.	Source S has been included as part of a joint WINEP scheme with Southern Water to restore Arundel Park SSSI to 'favourable' condition. Natural England have noted that there is currently insufficient evidence to exclude a hydrogeological link between the SSSI and the chalk groundwater abstractions and therefore to determine whether they are having an impact on the designated features. A pre-AMP8 study commenced in April 2024 but has been put on hold whilst we wait for Natural England to clarify what is required from the investigations regarding the condition assessments. To manage the WFD risks prior to delivering the environmental outcomes in AMP8, we are committed to monitoring the 'QRST' group abstraction relative to the 'low' environmental destination licence assumptions within our fWRMP24 that are designed to alleviate WFD 'no deterioration' concerns. This is reported on in our WRMP Annual Reviews.	No further work or amendments required to our current Drought Plan. This work will be undertaken as part of the AMP8 WINEP and our next Drought Plan will contain any relevant updates to the scheme.
Carry out a detailed desktop assessment of potential receptors and impacts on the preservation of archaeological remains.	We will share the most recent Source S drought permit EAR with Historic England. Further work will be undertaken for the drought management options included in our next Drought Plan (2027) to ensure alignment with our WRMP24 environmental assessments.	No further work or amendments required to our current Drought Plan.

To update our current Drought Plan with the WRMP24 environmental assessment information, we will amend the following:

- Include this document as an additional Appendix M to the Drought Plan
- We will add an 'Appendix K part 2' to include the fWRMP24 SEA Report and an 'Appendix J part 2' to include the fWRMP24 HRA Report.

5.2 Forward look

We are currently preparing our draft 2027 Drought Plan for public consultation in Autumn 2025. This plan will contain further environmental assessment updates.