



Strategic Environmental Assessment of Thames Water's Final Drought Plan 2017

Post Adoption Statement

Report for Thames Water

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SEA of the Drought Plan: Post Adoption Statement

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Front cover image: River Darent, Sundridge Drought Option

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1 Introduction

1.1 Background to the Drought Plan

Water companies in England and Wales are required to prepare and maintain statutory Drought Plans (DPs) under Sections 39B and 39C of the Water Industry Act 1991, as amended by the Water Act 2003, which set out the short operational steps a company will take before, during and after a drought. The Water Industry Act 1991 defines a DP as ‘a plan for how the water undertaker will continue, during a period of drought, to discharge its duties to supply adequate quantities of wholesome water, with as little recourse as reasonably possible to drought orders or drought permits’.

TWUL last published its statutory DP in 2013. The Drought Plan Direction 2016, which reflects changes made by the Water Act 2014 regarding the publication frequency of drought plans, states that revised DPs should be submitted according to the following schedule:

4 (b) for a revised drought plan

If section 39B(6)(a) of the Act applies, within 6 months after the date on which the material change of circumstances occurs; and

If section 39B(6)(c) of the Act applies, within 4 years and 3 months after the date on which its drought plan, or its last revised drought plan, is published.

On 1 October 2010, Section 76 of the Water Industry Act 1991 was amended by the commencement of Section 36 of the Flood and Water Management Act 2010. The Water Use (Temporary Bans) Order 2010 also commenced on 1 October 2010 and provides definitions and clarifications on these activities.

The draft DP was published for consultation, which ran from 6 January until 17 February 2017, accompanied by a Strategic Environmental Assessment (SEA) Environmental Report and Habitats Regulations Assessment (HRA) Screening Report. Following stakeholder consultation and comment, TWUL considered representations from consultees on the draft DP and made amendments, as set out in the Statement of Response (SoR) published on 21 April 2017, Thames Water submitted a revised draft DP and accompanying revised draft SEA Environmental Report on 21 April 2017. The revised draft DP and SEA Environmental Report incorporated the changes that were set out in the SoR. The final DP was submitted to the Secretary of State on 2 June 2020, accompanied by this report and final HRA Screening Report.

The period encompassed by the DP 2016 is 2017 to 2022. The next revision of the DP would be published in 2022.

1.2 The SEA Process

1.2.1 Overview of Strategic Environmental Assessment

TWUL's Final DP has been subject to SEA in compliance with the SEA Directive¹, as transposed in England by the Environmental Assessment of Plans and Programmes Regulations 2004 (referred to as the 'SEA Regulations'). The SEA of Thames Water's DP started in early 2016. A SEA Scoping Report was issued to the statutory consultees on 1 June 2016 and an SEA Environmental Report was produced and issued for public consultation alongside the draft DP in January 2017. HRA screening of the DP was also undertaken and helped to inform the SEA process. Following approval of the Drought Plan for publication by the Secretary of State, this SEA Post Adoption Statement is being issued to accompany the published plan in accordance with the provisions of Regulation 16.

¹ Directive 2001/42/EC

1.3 Purpose of the SEA Post Adoption Statement

In accordance with Part 4 of the SEA Regulations, specifically Regulation 16 (see **Appendix A**), this SEA Post Adoption Statement describes:

- How environmental considerations have been integrated into the final DP (Section 2)
- How the Environmental Report has been taken into account (Section 3)
- How responses to consultation have been taken into account (Section 4)
- Reasons for choosing the final DP as adopted, and why other reasonable alternatives were rejected (Section 3)
- The measures that are to be taken to monitor the significant environmental effects of implementation of the final DP (Section 5).

2 How Environmental Considerations have been Integrated into the Final Drought Plan

The Environment Agency Drought Plan Guidelines² state that a drought plan sets out what actions a company will take before, during and after drought to maintain a secure supply of water. It also sets out how a company will assess the environmental effects of your actions to maintain supply and what you will do to mitigate for damage. This must set out how the effects of a drought and the actions taken under the plan will be monitored. The plan must also set out what mitigation and compensation measures you plan to make to minimise the impact of your actions on the environment.

Environmental considerations were incorporated into the development of Thames Water's DP from the outset. In the previous revision of the Statutory DP (2013), TWUL undertook drought contingency studies and produced Environmental Assessment Reports (EARs) for the drought permit/order options included in Thames Water's DP. The EARs were prepared in collaboration with the Environment Agency and Natural England. In 2016, the EARs were updated with additional baseline information (where applicable) and prepared in accordance with the revised Environment Agency Drought Plan Guidance in consultation with the Environment Agency and Natural England.

The SEA reviewed all the environmental and social effects of the full range of drought options included in Thames Water's draft DP. The 2016 updated EARs supported the SEA with respect to the drought permit and drought order options.

Because of the nature of the consenting system for drought actions, a DP must include all measures that the company may progressively need to take as the severity of a drought increases, including those that would only be needed in the worst possible drought. These will typically have very significant environmental effects, but are extremely unlikely to be required in the period of the plan. As a result, DPs in general encompass a basket of measures that will only be implemented if and when required because of the unpredictable occurrence of a drought event, and thus the actual impact of the plan over its life is subject to significant uncertainties. TWUL's DP therefore includes a range of possible measures to allow TWUL to respond to a particular drought in the most appropriate way.

As a result of the differing nature of droughts and differing response of the range of available water sources to the characteristics of an ensuing drought, it is impossible to predict in advance which and how many of the measures will be required. However, there are a number of factors that help inform the anticipated priority of selection. For example, with respect to options requiring a drought permit or drought order, the potential for increased resource availability, raw water quality, network capability and likely environmental effects are taken into consideration.

The effects identified by the SEA were integrated into the draft DP issued to Defra in January 2017. The outputs of the SEA provided a comparative assessment of the environmental effects of implementing each drought option, which was used by TWUL, along with operational factors, in determining the priority of each option within each WRZ (as identified in Appendix C of the DP). For example, the SEA provided commentary on characteristics of any significant adverse effects, highlighted options with lower impacts that could be selected in preference, consideration of major beneficial effects, identified options which should only be implemented as a last resort due to the potential significance of their adverse effects, and also identified combinations of options that may give rise to cumulative effects.

The SEA considered a wider range of impacts than required by the DPG for the environmental assessment of drought permits/orders, e.g. potential cumulative effects with other plans and programmes. Therefore, in the event of a drought, the SEA provides an additional information source and a comparative assessment of the environmental effects of implementing each drought option, including the potential for cumulative effects. TWUL uses this information, along with operational considerations, to define which options are to be implemented in a drought.

² Environment Agency (2020) Water Company Drought Plan Guideline, April 2020

3 How the Environmental Report Influenced the Drought Plan

As stated in Section 2, the DP does not define specific programmes of measures which the SEA can influence (as is the case with Water Resource Management Plans). However, information from the Environmental Report, the HRA Screening Report and the updated EARs was incorporated into the DP Appendix C tables and used, together with operational considerations, to assist in assigning priority levels to the options for implementation in a drought. This information comprised effects of the individual options within each WRZ (including identification of mutually exclusive schemes) and cumulative effects within and between different WRZs; with existing Thames Water abstractions; and with neighbouring water company DPs. It is noted that the priority level assigned is indicative only and may change depending on circumstances at the time of requirement and may also be influenced through discussions with the Environment Agency.

Specific examples of how the findings from the SEA were integrated into the DP are described in Table 3.1. It should be noted that the SEA outputs were integrated into both the draft DP and the revised draft DP (following consultation responses) sent to Defra and the Environment Agency on 21 April 2017.

Table 3.1 SEA Findings and their Consideration in the DP

Finding / Output	How it was Integrated into the DP
Drought Option Effects – London WRZ	
Individual scheme assessments were undertaken. Potential cumulative scheme effects and mutually exclusive schemes were also identified.	On the basis of these assessments, SEA outputs were integrated into the DP by influencing the priority level identified for each scheme in each WRZ (as identified in Appendix C of the DP). Specific details are provided below.
The SEA and EARs confirmed that the Sundridge drought options, Eynsford drought option and Waddon drought option could result in significant adverse effects on the environment. As identified by the SEA and EARs the Horton Kirby ASR option, Wansunt option and Crayford options have relatively few effects on the environment.	As identified through the SEA and confirmed by consultation response, all other options in the London WRZ were prioritised above Sundridge drought options and Eynsford drought option. This priority reflects the fact that the EA consider Sundridge and Eynsford to be the most sensitive DP options in the London WRZ, with Eynsford more sensitive than any other. The priority of the Horton Kirby ASR option (priority 2) Crayford Drought Permit is (priority 3) and Wansunt (priority 3) mirrors the above.
Drought Option Effects – SWOX WRZ	
The SEA identified Gatehampton and the option to use the Oxford Canal as resulting in low environmental impacts. The SEA highlighted seven SWOX drought options as having potentially more significant environmental effects (Baunton drought options, Meysey Hampton, Farmoor, Axford 2, Blewbury, and Childrey Warren).	Gatehampton and the option to use the Oxford Canal were assigned priority 1 in view of the low environmental impacts that the options are likely to have. Farmoor was also assigned priority 1 and identified as the principal significant option as it provides the greatest potential benefit of all SWOX options and has direct impact on critical reservoir storage. The SEA does identify some adverse environmental effects for this option, however, other SWOX drought options have been identified as having potentially more significant environmental effects. Meysey Hampton and Latton options were assigned priority 2 in view of the importance of

	<p>these options to the drought resources that might be needed for SWOX WRZ. These options have been identified as having the potential to result in adverse effects on watercourses but these effects are likely to be less severe than the options available in the WRZ.</p> <p>The priority of the remaining options was based on potential environmental impact (as shown in the SEA) with Sor Brook priority 4 due to impact on the Sor Brook, Bibury at priority 5 due to impact on the River Coln, Blewbury priority 6 due to impact on the Blewbury Ponds, Ogbourne priority 7, Baunton higher abstraction priority 8 due to impact on the River Churn, Ogbourne emergency boreholes priority 9 due to impact on the River Og and Kennet and Axford priority 10 and 11.</p> <p>The latter two options (upper Kennet options) priority was agreed to be appropriate as appropriate with respect to consultation responses.</p>
<p>Drought Option Effects – Kennet WRZ</p>	
<p>The principal option identified in the Kennet Valley is the option to vary the flow constraint condition at Pangbourne. The SEA identified Pangbourne as having significant adverse environmental effects relative to most other options in the Kennet Valley WRZ. Fobney emergency boreholes, provide significant potential gain and the EAR identifies the option likely to only result in minor adverse hydrological effects and relatively minor impacts on environmental features. The Fobney Direct option provides a significant gain to the principle WTW serving the major demand area in the WRZ. However, the EAR and SEA identify a major hydrological impact on the Holy Brook between the Arrowhead control structure and its confluence with the River Kennet and moderate adverse effects for a range of environmental features.</p>	<p>The environmental impacts assessed in the SEA has been considered when assigning a priority order for the Kennet Valley Drought Permit options. The priority 1 option is the Fobney boreholes as they provide significant gain and are only identified to result in minor adverse hydrological effects and relatively minor impacts on environmental features. The Fobney Direct option provides significant gain, however, the SEA identifies a major hydrological impact in addition to other moderate adverse impacts, therefore, is considered lower priority compared to the Fobney boreholes option.</p>
<p>Drought Option Effects – Guildford</p>	
<p>The options considered for the Guildford zone are a variation to the abstraction licence at Albury and additional abstraction from the Shalford source. Both sources have been proven to be robust to drought.</p> <p>The SEA identified that Shalford option would result in very limited adverse effects of negligible significance. Whereas the SEA identified a number of moderate adverse effects with respect to the Albury option. Amongst other things these adverse effects relate to the potential to impact on the flows in the Law</p>	<p>The Shalford option was assigned a priority 1 because it is the option that provides potential benefit to the principal demand area of Guildford and also likely to have significantly less adverse impacts than the Albury option.</p>

<p>Brook, which has suffered from low flows in the past.</p>	
<p>Cumulative Effects</p>	
<p>The potential for cumulative effects between a number of drought options was identified for a number of options:</p> <ul style="list-style-type: none"> • Latton and Meysey Hampton • Axford 1 with Ogbourne 1 • Ogbourne 1 and Ogbourne Emergency Boreholes • Ogbourne 1, Ogbourne Emergency Boreholes, Axford 1 and Axford 2 with the West Berkshire Groundwater Scheme • Axford 2 with Ogbourne 1 and Ogbourne Emergency Borehole • Blewbury with the West Berkshire Groundwater Scheme • Fobney Direct with Fobney Emergency Borehole • Crayford with Wansunt 	<p>It is not appropriate to recommend alterations to the priority of options described in Appendix C of the DP in light of the potential for cumulative effects due to the range of potential hydrological scenarios possible at a time of drought.</p> <p>However, the potential for cumulative effects has been established (and identified in the DP) and will need to be taken into consideration should these drought permits be required.</p>
<p>The potential for cumulative effects between the Thames Water DP (the Waddon drought permit) and the Sutton and East Surrey Water draft DP was identified.</p>	<p>An assessment of the cumulative impacts of operating the associated drought permits simultaneously was undertaken in Summer 2018. However, in an evolving drought situation, further discussions with Sutton and East Surrey Water will be required in order to understand the likelihood of the drought permits being operated at the same time. Alternative drought options may need to reviewed in order to determine the appropriate approach according to the prevailing drought conditions.</p>

4 Consultation and Updates

4.1 Consultation on the SEA

The SEA Regulations require consultation at the scoping stage and on the assessments as documented in the Environmental Report. Consultation with the statutory bodies defined by the Regulations is mandatory at both stages. Although consultation with the public is only mandatory at the Environmental Report stage, TWUL consulted both the statutory bodies and the public at both stages.

The SEA process comprised several consultation stages and updates as follows:

- The SEA Scoping Report, containing description of the route through screening, was issued on 1 June 2016 to statutory consultees for a five week period of consultation until 7 July 2016. From this, it was concluded that SEA would be beneficial for the TWUL DP taking into account a precautionary approach and uncertainties associated with whether it sets a framework for future development consent and an unknown outcome of the Habitats Regulations Assessment (HRA) screening at that time.
- The SEA Environmental Report was published alongside the Draft Drought Plan and draft HRA Screening Report on Thames Water's website on 6 January 2017 for public consultation and received a number of responses during the consultation period, which ran for a period of six weeks ending 17 February 2017.
- A Statement of Response (SoR) was prepared by Thames Water and published on 21 April 2017, setting out how TWUL were taking the comments into account and the changes made to the DP as a result. Some representations made were quite detailed and were subsequently addressed separately within the final DP.
- TWUL submitted a revised draft Drought Plan and associated documents (including a revised SEA Environmental Report) to the Secretary of State on 21 April 2017 for their review and approval.
- In April 2018, Defra reviewed the Thames Water Draft DP 2016, the representations received in the response to the public consultation, the SoR, and the Environment Agency's advice to the Secretary of State. Following this review, Defra indicated that the Secretary of State required TWUL to provide a high-level summary of the environmental impact of Thames Water's drought actions in droughts worse than record ('severe droughts'). In response to this, Thames Water prepared an Environmental Assessment of Severe Droughts – Summary Report³. Implications to the SEA following this assessment were addressed separately in the Severe Drought Report and TWUL Final DP⁴. Following this, Thames Water made further revisions and submitted these to Defra on 30 August 2018.
- The SEA Environmental Report and SEA Post Adoption Statement will be published with the Final Drought Plan on Thames Water's website. A Final HRA Screening Report will be published at the same time.

4.2 Consultation Responses

Table B1.1 in **Appendix B** lists the responses to the consultation on the draft DP which relate to the SEA and HRA and the resulting changes made. These responses are included in the Statement of Response published on Thames Water's website <https://corporate.thameswater.co.uk/about-us/our-strategies-and-plans/our-drought-plan/drought-plan-update-2017>. The Environmental Report and HRA Report for the revised draft DP took account of these comments.

³ Environmental Assessment of Severe Droughts – Summary Report, Thames Water Utilities Ltd (prepared by Ricardo Energy and Environment), July 2018

⁴ Thames Water Utilities Ltd (2020) Thames Water Final Drought Plan 2017, June 2020

5 Mitigation and Monitoring of the DP

5.1 Overview

Consideration of mitigation measures and monitoring of potential effects has been an integral part of the SEA process. Key stages of the SEA process include Task B5: *Mitigating adverse effects*, Task B6: *Proposing measures to monitor the environmental effects of plan or programme implementation* and Stage E: *Monitoring the significant effects of the plan or programme on the environment*. The SEA Directive also requires the significant environmental effects of implementing a plan to be monitored. The sections below describe:

- how these tasks have been addressed;
- how Thames Water intends to ensure that the mitigation measures and monitoring plans are implemented for any adverse effects that are identified; and
- the means by which the environmental performance of the DP can be assessed.

5.2 Mitigation Measures

Mitigation may be defined as a measure to limit the effect of an identified significant impact or, through the most successful application, avoid the adverse impact altogether, the latter being the preferred option.

Consideration of mitigation measures has been an integral part of the SEA process. The SEA appraisals have been based on residual impacts, i.e. those impacts likely to remain after the implementation of reasonable mitigation. Certain assumptions have been made regarding this:

- Where suitable mitigation measures are known and identified (e.g. as informed through environmental assessment reports, where available, or Thames Water's drought management option forms in the Final DP), these have been taken into account, such that the resultant residual impact has been determined.
- In line with recommendations made in the UKWIR SEA Guidance⁵, the SEA appraisals have assumed the implementation of reasonable mitigation, such as the use of good construction practice. This is particularly applicable to unused supply-side options which are currently non-commissioned and which do not operate as 'business as usual', and would require recommissioning in the event of use as a drought option.
- No mitigation is proposed for abstraction licences which are issued by the Environment Agency based on an assessment of the potential impacts on the environment. These licences already contain flow constraints at low flows or conditions associated with an operating agreement. This is applicable to all supply-side options which are actions within existing abstraction licence limits which have been subject to the Environment Agency's Review of Consents process.

As part of the environmental assessment of each drought option, for those receptors with a potential moderate or major impact from implementation of the associated drought permit, site specific monitoring has been recommended, together with triggers to inform practical implementation of mitigation measures. These are described in the EARs and EMPs. The range of mitigation measures that are possible for the features identified fall into three general activities:

1. Measures to reduce impacts at source, by reducing the hydrological or water quality impact;
2. Measures to modify environmental conditions in the river, by conducting actions within the watercourse to reduce the pressure at sensitive locations; and

⁵ UKWIR (2012) Strategic Environmental Assessment and Habitats Regulation Assessment – Guidance for Water Resources Management Plans & Drought Plans (12/WR/02/A).

3. Management of sensitive ecological species and communities, through direct action to mitigate impact by movement or management of the receptor/feature itself.

Mitigation measures identified in the EARs are feature, location, species and community specific. They will be informed by walkover surveys of all of significantly impacted reaches before and during the implementation of the drought measure. This will enable a targeted approach to mitigation based on monitoring. If post-drought measure monitoring identifies impacts associated with implementing the permit, consideration will be given to compensatory measures, such as restocking of fish.

5.3 Monitoring Requirements

Monitoring is required to track the environmental effects to show whether they are as predicted, to help identify any adverse impacts and trigger deployment of mitigation measures.

As discussed in Section 2, water companies are already required to assess the environmental impacts of supply side drought measures included in a DP. The Water Industry Act (WIA) and the Drought Plan Direction 2016 require that water companies include in their DP a statement of how they will monitor the effects (the Environmental Monitoring Plan (EMP)). This requirement is explained in the DPG which states *“you must carry out an environmental assessment and produce an environmental monitoring plan for each of your supply side actions in your drought plan.”*

Section 4 (Monitoring) of the Environment Agency’s consultation draft “Environmental assessment for water company drought planning – supplementary guidance” explains the function of monitoring required prior to implementation of the drought permit to establish the prevailing baseline conditions associated with environmental drought, as well as the monitoring to be carried out during implementation (particularly to inform and trigger any mitigation measures) and post-implementation.

As stated in Section 2 and Section 3, the EARs have been updated in accordance with Government regulations and good practice guidance, including the DPG. Monitoring for significant effects identified by the SEA are included in the EMPs by virtue of the requirements of the DPG. EMPs draw on existing studies, monitoring data, including data collected by other bodies such as the Environment Agency and additional monitoring undertaken between 2013 and 2016. To assist in the development of potential drought permit or order applications identified in its DP and further inform the environmental assessments, Thames Water has made a commitment to undertake additional baseline environmental surveys, where appropriate. A programme of baseline environmental monitoring began in 2012 and has been undertaken and reviewed annually by TWUL to reflect any changes in the DP and / or revisions to any of the EARs.

The EMPs fulfil three main requirements of the DPG and involve three monitoring periods: in-drought monitoring comprising pre-permit application monitoring at the on-set of environmental drought; post-permit implementation monitoring during implementation of the drought permit/order; and post-drought (recovery) monitoring after the drought permit/order implementation period ends. Monitoring is undertaken for environmental features that are identified as sensitive to the impacts of the drought permit/order. A walkover survey forms a key activity to each of the monitoring periods.

EMPs are only developed for drought options that require a drought order/permit application, and therefore do not include monitoring for significant effects identified by the SEA with respect to demand side drought options or supply side drought options that do not require a change of licence. Furthermore, the scope of the EARs and related EMPs (as prescribed by the DPG) does not cover all the potential significant effects identified by the SEA, for example, significant effects identified under the SEA topics 'Material assets and resource use' and 'Air and climate'.

With respect to the impacts identified in the SEA that are not covered by EARs and associated EMPs, many company level impacts, such as carbon emissions, are monitored and reported annually by TWUL in the Annual Performance Report⁶.

⁶ Thames Water Utilities Ltd (2019) Annual Report and Annual Performance Report 2018/19.

Table 5.1 identifies indicators and monitoring organisations against each of the objectives for which significant effects were assessed and which are not covered by the EMPs developed for drought options that require a drought order/permit application.

Table 5.1 SEA Monitoring Parameters outside the scope of DP EMPs

SEA Topic	SEA Objective	Indicator	Organisation
Population and Human Health	2.2 To protect and enhance the water environment for other users including recreation and tourism	Complaints to Thames Water customer services Complaints about the water industry	Thames Water Consumer Council for Water
Material assets and resource use	3.1 To minimise consumption of resources and promote energy efficiency	Operational energy consumption (kWh/MI of water treated) e.g. for desalination options	Thames Water
Air and Climate	6.1 To maintain and improve air quality	Local Authority routine air quality monitoring data	Local Authorities
	6.2 To minimise greenhouse gas emissions	Net greenhouse gas emissions per MI (million litres) of treated water (kg CO ₂ equivalent emissions per MI)	Thames Water

6 Availability of Documents

The adopted final DP and accompanying SEA documentation is available on the TWUL's website at:

<https://corporate.thameswater.co.uk/about-us/our-strategies-and-plans/our-drought-plan>

The documents are also available for inspection at:

Thames Water Utilities Limited,
Clearwater Court,
Vastern Road,
Reading RG1 8DB.

If you would like to request copies of the DP or associated documentation, please email Steve.Tuck@thameswater.co.uk.

Appendix A SEA Post Adoption Procedures

Part 4 of The Environmental Assessment of Plans and Programmes Regulations 2004 (referred to as the “SEA Regulations”) requires Thames Water, 'as soon as is reasonably practicable' after the adoption of the DP, to:

1. Make a copy of the DP and Environmental Report available at its principal office for inspection by the public at all reasonable times and free of charge;
2. Notify the public and potentially affected parties of their availability;
3. Inform the statutory consultees and other parties who responded;
4. Issue a statement containing:
 - How environmental considerations have been integrated into the DP;
 - How the environmental report has been taken into account;
 - How consultation responses have been taken into account;
 - The reasons for choosing the DP as adopted;
 - Measures to monitor the significant environmental effects of the DP.

Requirements 1 to 3 have been fulfilled by the publication of the DP and SEA documents on Thames Water's website and informing all consultees of the publication. In addition, with respect to 1, a hardcopy will be available for inspection on request.

The publication of this SEA Post Adoption Statement fulfils Requirement 4.

Appendix B SEA and HRA Related Comments on the Draft Drought Plan

Table B.1 Consultation Responses on the draft DP relating to SEA and HRA, extracted from the Statement of Response

Consultee	Comment	Thames Water Consideration & <i>Changes to the Plan as a result</i>
Natural England (Reference S9)	Natural England has no concerns to raise in relation to the submitted HRA. However, NE notes that within the HRA document the EA's River Thames flood alleviation scheme is discussed and it is stated that Natural England supports the River Thames Scheme, Natural England has clarified that it does not actively support the scheme and is currently in consultation with the Environment Agency to assess the potential risk it poses to the South West London Waterbodies SPA. Natural England advises that the HRA document should be amended to reflect this.	Thames Water will amend the HRA document to reflect the fact that Natural England does not actively support the RTS scheme. Thames Water will undertake further work to make its Drought Permit EARs permit ready. Thames Water has agreed with the Environment Agency that work on the EARs can be completed to an agreed programme after submission of its revised draft Drought Plan. These changes will be made as part of that programme of changes.
Environment Agency (Reference EA4)	Strategic Environmental Assessment mitigation: Thames Water should provide further information on the mitigation that has been considered on a whole plan scale, drawing on information from the EARs and Environmental Monitoring Plan. This will help to understand the impacts of the drought plan before mitigation is enacted.	Thames Water will update its Drought Plan SEA to provide further information on the mitigation that has been considered for the Drought Permits, drawing on information from the EARs and Environmental Monitoring Plan. This approach was agreed with the Environment Agency at a meeting following receipt of the EA representation. <i>Thames Water has updated its SEA in Section 7 to provide further information on the mitigation that has been considered on a whole plan scale. Text has been added to the SEA Environmental Report along with a summary table which includes example mitigation measures used in the Environmental Assessment Reports for the Drought Permits-</i>
Environment Agency (Reference EA7)	Improvements – Improvement 1 – Strategic Environmental Assessment Environmental Report: There are a number of improvements that could be made to the SEA Environmental Report to improve clarity and understanding. These include details on the monitoring that will be carried out, details on the future baseline of the environment for the different	Thames Water will make changes to the SEA Environmental Report to improve the clarity and understanding of the SEA. Thames Water has added the following section to the SEA ER: <i>'The only significant linkage between the Drought Plan and other plans or programmes is with the Water Resources Management Plan (WRMP). The Drought Plan and the WRMP have distinct separate but linked purposes. The Drought Plan is a short term day to day plan for managing Thames Water's actions during a drought. The Drought Plan covers the monitoring and measurements of</i>

	<p>resource zones, and confirmation of the spatial scope of the assessment.</p> <p>Improvement 1 – SEA ER 1.1. The main report (table 2.1) includes a summary of the plans and programmes that the draft drought plan has a relationship to. However, the detailed relationship and how these are taken into account in the draft drought plan is provided in Appendix C. The main report would be strengthened if a summary of these implications were included.</p> <p><i>Recommended Improvement:</i> Thames Water should include a summary of the relationship between the draft drought plan and other plans and programmes and how they have influenced the drought plan in the main report.</p>	<p><i>water resource variables to determine the onset of drought, the triggers for undertaking actions during a drought, the communications that would be undertaken in a drought, the demand and supply side actions undertaken in a drought and the management structure put in place during a drought. The Drought Plan also sets out how droughts of differing severity would be managed and the impact they would have on the provision of water supply. The Drought Plan is revised every five years and is based on the existing assets available to Thames Water. It does not provide the framework for development of new water supply options. In contrast the (WRMP) sets out the plans for meeting water resources needs over at least 25 years, but also includes consideration of requirements up to 80 years into the future. It also takes into account factors such as growth, climate change and loss of resources to protect the environment. The WRMP is the plan for future investment in demand management programmes and new water resource options and so sets the framework for development. The WRMP is also revised every 5 years to update the plans for future demand management and resource requirements.</i></p> <p><i>The key links between the two plans are that the Drought Plan sets the tactical response to drought episodes using the water resource assets that are specified in the WRMP as the base resource available at the time the plan is produced and for the following five years. The Drought Plan sets out in detail the methods used to implement the measures that are assumed to be available in the WRMP (e.g. temporary restrictions on the use of water) and it is therefore critical that the Drought Plan and WRMP are consistent in the assumptions made relating to what resources are available and what measures are implemented at what stages in a drought. The Drought Plan also addresses the challenge that would be faced in the event of droughts of greater severity than have been experienced in the historic record and so indicates the situations in which pressure on resources would be greatest. This is used to feed into the WRMP, outlining where measures are needed to improve the resilience to potentially more severe droughts in the future. The Drought Plan can be updated before 5 years have elapsed if necessary for example if a new resource development came on line.</i></p> <p><i>It is important to note a key distinction between the assumptions in the Drought Plan and WRMP in respect of Drought Permit options. The WRMP does not specifically include the utilisation of Drought Permit options in its assessment of the supply demand balance. Drought Permit options are a key feature of the Drought Plan and are included to provide greater resilience to severe droughts and they do not feature in the WRMP because they have the potential to cause adverse impact on the environment and so are not options that should be relied upon for routine use. The application of Drought Permits is, however, considered in sensitivity testing of</i></p>
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	<p>Improvement 1 – SEA ER 1.2. The cumulative impacts of drought permits have been identified in the SEA Environmental Report. The Crayford and Wansunt drought permits have been identified as having minor impacts on the River Cray downstream of Crayford, but are likely to have cumulative impacts on the same stretch. There is also potential in-combination effects with Sutton and East Surrey Water's drought permits.</p> <p><i>Recommended Improvement:</i> The company should provide further information on the cumulative impacts of the Crayford and Wansunt drought permits on the River Cray. Further information should also be provided on the cumulative impacts with Sutton and East Surrey Water's drought permits.</p> <p>Improvement 1 – SEA ER 1.3. Appendix D describes the future baseline of the environment and key issues are identified in section 3.4, however, it is not clear what would happen in the absence of the drought plan.</p> <p><i>Recommended Improvement:</i> Thames Water should provide further clarity on future baseline of the environment in the absence of the drought plan. A short statement under each section to clarify could be provided.</p> <p>Improvement 1 – SEA ER 1.4. A non-technical summary has been provided. The addition of images would be useful to improve readability. Explanation on the spatial scope and water resource zone would also help readers better</p>	<p><i>potential investment portfolios in the WRMP to examine their robustness and likely environmental impacts.'</i></p> <p>Thames Water has also added a summary of the relationship between the Drought Plan and other Plans and Programmes to Section 1.6 of the SEA.</p> <p>Assessment of the cumulative impacts of the Crayford and Wansunt drought permits on the River Cray is ongoing, as we are waiting for the outcome of the NEP investigation at the River Cray. The Crayford and Wansunt EARs will be updated with potential cumulative impacts when the NEP investigation report is available. However, the potential for a cumulative impact associated with these drought measures has been noted in Section 6.3.</p> <p>Assessment of cumulative impacts with Sutton and East Surrey Water's drought permits is ongoing following TW recently being informed of S&ESW' drought permit options, and will be reviewed and re-assessed as necessary during the process of updating the drought permits to permit ready.</p> <p>The future baseline for each WRZ is provided in Appendix D to the Drought Plan SEA Environmental Report. The future baseline is not central to the Drought Plan as the temporal scope of the plan is only five years, hence we have not added additional detail regarding the future baseline</p> <p>A map has been added to the Non-Technical Summary (Fig.1.1). No additional tables have been added to the Non-Technical Summary, in order to maintain brevity. The Non-Technical Summary already includes the following sections on alternatives as follows- 'DPs encompass a number of drought options that will only be implemented if and when required. Each drought is different in terms of its severity, season,</p>
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	<p>understand the findings of the assessments. There is also no mention of alternatives in the non-technical summary.</p> <p><i>Recommended Improvement:</i> Thames Water should provide better clarity on the spatial scope of the assessment and consider using more images / tables for ease of reading in its non-technical summary.</p> <p>Improvement 1 – SEA ER 1.5. The Environmental Report states that monitoring will take place following the implementation of the drought plan. Given that Environmental Monitoring Plans are already available for the supply side drought permit / order options, some examples could be drawn from these to expand on future monitoring scenarios.</p> <p><i>Recommended Improvement:</i> Thames Water should consider providing examples from Environmental Monitoring Plans. Identification measures to monitor significant environmental effects should be included in the final drought plan.</p>	<p>location and duration and each combination of these factors may require a different response in terms of measures. In the context of drought planning, individual drought options are taken to constitute alternatives. TWUL’s Draft DP comprises a total of 51 drought options (10 supply side options, six demand options and 35 drought permit/order options). The SEA provides information on the relative environmental performance of alternatives, and is intended to make the decision-making process more transparent. The SEA can, therefore, be used to support the timing and implementation of drought options within the DP.’</p> <p>Thames Water has updated its SEA in section 7 to provide further information on the mitigation that has been considered on a whole plan scale.</p> <p>The following text sets out the broad categories of these mitigation measures and has been added to the SEA Environmental Report along with a more lengthy summary table:</p> <p><i>‘As part of the environmental assessment of each drought option, for those receptors with a potential moderate or major impact from implementation of the associated drought permit, site specific monitoring has been recommended, together with triggers to inform practical implementation of mitigation measures. These are described in the EARs and EMPs. The range of mitigation measures that are possible for the features identified fall into three general activities:</i></p> <ol style="list-style-type: none"> <i>1) Measures to reduce impacts at source, by reducing the hydrological or water quality impact;</i> <i>2) Measures to modify environmental conditions in the river, by conducting actions within the watercourse to reduce the pressure at sensitive locations; and</i> <i>3) Management of sensitive ecological species and communities, through direct action to mitigate impact by movement or management of the receptor/feature itself.</i> <p><i>Mitigation measures identified in the EARs are feature, location, species and community specific. They will be informed by walkover surveys of all significantly impacted reaches before and during the implementation of the drought measure. This will enable a targeted approach to mitigation based on monitoring. If post-drought measure monitoring identifies impacts associated with implementing the permit, consideration will be given to compensatory measures, such as restocking of fish.</i></p> <p><i>Examples of monitoring and mitigation that would be conducted during implementation of drought measures and following the drought period are presented in Table 7.1. Note that these are examples only, and have been provided to indicate</i></p>
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	<p>Improvement 1 – SEA ER 1.6. The spatial scope assessed in the SEA extends beyond the boundaries of the Thames Water supply area to include the whole of the Thames river basin. Figure 1.1 shows this but it is not clear. It would help if the spatial scope was added. The assessment of cumulative effects include trans-boundary effects with other suppliers. It would also be useful to confirm if all of these fall within the Thames river basin. The Environmental Report states that the baseline is presented at local, regional and national levels where possible. This has been done for some environmental categories in Appendix D. The baseline is described by type rather than location. More specific information could be provided for each WRZ, for example. It is unclear what spatial scope the baseline is for - should this not cover what is identified in section 1.3.5?</p> <p><i>Recommended Improvement:</i> Thames Water should ensure the spatial scope includes the cumulative assessment and update figure 1.1 to show this scope (not just supply areas / surface water features). It should also confirm the spatial scope for the baseline.</p> <p>Improvement 1 – SEA ER 1.7. The nature and duration of potential effects have been set out in the Environmental Report, using an appraisal framework. Section 3.4.9 identifies that there are inter-relationships. However no detail has been provided for each of the SEA objectives.</p> <p><i>Recommended Improvement:</i> Thames Water should provide a matrix identifying these inter-relationships so that they are clearly identified.</p>	<p><i>the type of mitigation considered when assessing residual impacts during the SEA process. Actual EMPs would be site and event-specific, and finalised at the time of implementation.'</i></p> <p>Figure 1.1 in the SEA Environmental Report has been updated to better identify the SEA study area.</p> <p>A matrix identifying inter-relationships has been added to Section 3.4.9 of the SEA Environmental Report.</p>
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