

Drought Plan 2019

Annex 12: Strategic Environmental Assessment

Non-Technical Summary

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Version 1



from
**Southern
Water** 



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Introduction

The procedure for finalising a Drought Plan is to issue a draft Drought Plan for public consultation followed by the issue of a Statement of Response setting out intent and scope of changes alongside a revised draft Drought Plan that takes account of the comments made during the public consultation. The Drought Plan provides a comprehensive statement of the actions Southern Water will consider implementing during drought conditions to safeguard essential water supplies to customers and minimise environmental impact. It is consistent with Southern Water's Water Resources Management Plan (WRMP), the objective of which is to set the strategic plan for the delivery of water resources to balance supply and demand over the coming decades.

Drought Plans include a range of drought management measures that will only be implemented if certain conditions arise during a particular drought event. Each drought event is different in terms of its severity, season, location and duration and each combination of these factors may require a different response in terms of the measures to be implemented. In the context of Drought Planning, individual drought management options are taken to constitute alternatives. Southern Water's draft Drought Plan comprises a range of demand management measures and options for temporarily augmenting water supplies, including applying for Drought Permits and Drought Orders to increase the availability of water supplies.

This Strategic Environmental Assessment (SEA) Environmental Report has been prepared to help inform the development of the Southern Water Services revised draft statutory Drought Plan. A Habitats Regulations Assessment (HRA) and Water Framework Directive (WFD) assessment of the revised draft Drought Plan have also been carried out in parallel and have informed the SEA. The Final Drought Plan is expected to be published in July 2019.

SEA of certain plans and programmes is a statutory requirement under Directive 2001/42/EC, as transposed into UK law by the Environmental Assessment of Plans and Programmes Regulations 2004. The purpose of SEA is to incorporate environmental considerations into the preparation of plans and policy. Initial assessment of the potential environmental effects of Southern Water's draft Drought Plan in 2016 indicated that SEA was a statutory requirement due to the potential risk of adverse effects of certain drought management measures on a number of European designated conservation sites (Special Areas of Conservation and Special Protection Areas designated under the EU Habitats Directive and Birds Directive, respectively). Additionally, Southern Water wanted to ensure that environmental assessment considerations informed development of its Drought Plan; SEA provides a structured framework for enabling environmental effects to be considered in strategic planning and decision-making.

The SEA provides information on the relative environmental performance of alternative drought management measures. The SEA process (together with the HRA and WFD assessments) has been used to support decisions on those measures included in the final Drought Plan, as well as the timing and sequencing of their implementation in relation to other options.

The parallel HRA process has identified whether each drought management option (either alone, in combination or with other plans or projects) will have adverse effects on the integrity of European designated sites of conservation importance. Similarly, the Water Framework Directive assessment process has identified those drought management measures that present a potential risk of temporary deterioration to the environmental status of designated water bodies (reservoirs, rivers, groundwater and estuaries). The findings of the HRA and WFD assessments have been taken into consideration in carrying out the SEA, and collectively the assessments have led to revisions of the Drought Plan during its development in an iterative process to minimise environmental effects and, where feasible, deliver environmental benefits.

An SEA Scoping Report was issued in 14 November 2016 to statutory consultees and to a range of stakeholders to provide an opportunity for views to be provided on the proposed scope and assessment methods to be applied to this SEA Environmental Report. We responded to the comments raised by consultees and explained how we were taking their views into account in carrying out the assessment.

The key findings of the SEA are presented within this non-technical summary, which is being published alongside the final Drought Plan.

Approach

The assessment approach adopted has been 'objectives-led'. A series of SEA objectives have been derived from environmental and social objectives established in law, policy or other relevant plans and programmes, as well as from a review of the baseline environmental information for the area covering Southern Water's water source catchment areas and water supply boundary. The SEA objectives have been categorised under the following topic areas: biodiversity, flora and fauna; population and human health; material assets and resource use; water; soil, geology and land use; air and climate; archaeology and cultural heritage; and landscape and visual amenity.

The overall findings of the SEA describe the extent to which the objectives for each topic are met by each of the drought management options. It should be noted that detailed Environmental Assessment Reports (EARs) have been produced for the various Drought Permit and Drought Order options which, along with the HRA and WFD assessments, have been used to inform the SEA of these options, together with other relevant information.

The outputs of the assessment have been collated into an appraisal framework table for each drought management option with a colour coded effects summary (ranging from major beneficial effects to major adverse effects) which provides a comparative assessment of the residual environmental effects of implementing each drought measure (i.e. those impacts remaining after the implementation of any mitigation measures that Southern Water intends to implement to help address any identified adverse effects).

A cumulative, or in-combination, assessment has also been undertaken which has involved examining the potential effects of each of the drought management options in combination with each other and in combination with the implementation of other relevant plans and programmes. This has included considering cumulative effects with drought management measures of neighbouring water companies where these may be in close spatial proximity and affecting the same water body.

The area under consideration for the SEA reflects the spatial scope of the Drought Plan and covers an area of approximately 4,450km², extending from East Kent, through much of Sussex, to Hampshire and the Isle of Wight in the west. The area extends beyond the boundaries of the Southern Water supply area to encompass the catchment areas of various water sources that supply Southern Water's customers (for example, Bewl Water reservoir in the upper River Medway catchment in Kent) as well as water sources that provide bulk water supplies to Southern Water from other neighbouring water companies.

SEA Findings

Demand management options

Demand management measures serve to reduce pressure on water resources in a drought by temporarily reducing customer demand for water, and in turn, reducing the amount of water required to be abstracted from the water environment.

Demand management measures typically provide mostly minor beneficial effects through their contribution to sustainable abstraction, protecting human health and well-being by helping conserve water supplies in drought for customers' essential uses, and helping to reduce drought stress on the water environment. However, some moderate to major adverse effects have been identified with respect to those demand management measures that temporarily prohibit specific non-essential water uses due to the adverse effects such measures have on those people who rely on those uses of water for their livelihoods. Minor adverse effects on landscape/townscapes, land use, population, air quality (restrictions on using water for dust suppression) and some water dependent recreation and heritage facilities may be associated with Temporary Use Bans and non-essential water use ban Drought Order.

The potential application of an Emergency Drought Order to ration water supplies by using standpipes or rota cuts in emergency conditions has been assessed as having major adverse effects on the wider population, economic activity and livelihoods across the Southern Water supply area, as well as risks to human health.

As a consequence of this assessment, no demand management options were rejected from being included in the draft Drought Plan, but the phasing and timing of the different measures have reflected the SEA findings, with those measures having the least environmental and social effects selected for earlier implementation and other measures only being considered if more severe drought conditions occur. The demand management measures have been compared with the selected supply augmentation measures (see below) to determine the overall sequencing of the implementation of measures as reported in the final Drought Plan. In view of its major adverse effects on people and livelihoods, the Emergency Drought Order is not included as a demand management measure to be implemented for droughts up to and including a 1 in 500 year severity and would only be considered as an emergency measure in droughts more severe than a 1 in 500 year event.

Supply augmentation options

A range of alternative water supply augmentation options have been considered through the SEA process to help inform decisions on those measures to be included in the final Drought Plan.

Options included:

- 'rest' certain water sources to conserve water stored in reservoirs or natural groundwater bodies for use at a later stage in a drought
- increasing the import of water from neighbouring water companies
- recommissioning disused water sources
- applying for Drought Permits or Drought Orders to temporarily change the conditions of existing abstraction licences to provide additional volumes of supply
- use of temporary emergency desalination plants at defined locations along the coast or within estuaries

- potential use of water tankering to bring small volumes of water to specific locations from areas where there is a surplus availability of water supplies (likely to be from outside of the Southern Water supply area).

Most of these options do not require any construction works, with the exception of three emergency desalination plants (Sandown, Littlehampton and Sheerness), the provision of a pipeline to make a flow release to the Lukely Brook (for the Lukely Brook Drought Permit) and the recommissioning of disused water sources (Test Valley and Stourmouth Drought Permits/Orders).

‘Rest’ water sources

The options to ‘rest’ certain water sources by reducing abstraction during the onset of drought conditions to conserve water storage for later use if drought conditions intensify provides minor beneficial effects in respect of resilience to the prolonged effects of drought, as well as minor beneficial effects on the water environment by reducing the impact of abstraction at times of more intense drought conditions by drawing on the stored water rather than impacting on river flow.

Imports from other water companies

Options involving imports from other water companies would result in moderate beneficial effects on human health and resilient water supplies, with only minor adverse effects linked to energy and materials use for treating and pumping water to Southern Water’s supply area.

Emergency desalination

The emergency desalination options would avoid drawing on stressed freshwater resources, but there may be some adverse effects on the coastal or estuarine environment from construction activities and from the discharge of brine (water with a high salt content in excess of that of sea water) from the treatment process back to the coastal or estuarine environment. Best practice technologies and design will be used to minimise issues with impingement and entrainment, and intakes and outfalls, if not using existing outfalls, will be optimised during detailed design to avoid sensitive habitats (to be commenced at drought condition trigger levels).

Each of the emergency desalination options (Sandown, Sheerness and Littlehampton) has the potential for moderate beneficial effects regarding resilience to drought. However, the construction requirements, treatment processes and waste stream discharges have the potential for moderate adverse effects on resource use and minor to moderate adverse effects on the coastal or estuarine water environment. The Sandown and Sheerness desalination plant sites are located in proximity to a number of sensitive environmental receptors, including designated European conservation sites and Marine Conservation Zones, with the risk of minor to moderate adverse environmental effects after taking account of mitigation measures on biodiversity, flora and fauna.

Drought Permit and Drought Order options

Many of the Drought Permit and Drought Order options involve temporary modifications to existing abstraction licence conditions (e.g. to increase the volume of water that can be abstracted or to reduce the river flow conditions at which abstraction would normally need to cease) and therefore they do not involve any construction works. However, there are some options which require a Drought Permit or Order to recommission unused water sources (Test Valley and Stourmouth options), with modest construction activities having the potential for localised temporary minor adverse effects on human and environmental receptors.

Beneficial effects of Drought Permits and Drought Orders options largely comprise minor beneficial effects on population and human health and maintaining water supply resilience in drought conditions.

The adverse effects of the Drought Permit or Drought Order measures vary considerably depending on the scale of the additional abstraction to be authorised and the sensitivity of the environment, in particular the affected water bodies. For Water Resource Zones with a number of Drought Permit or Drought Order options available, the SEA findings (together with the HRA and WFD assessments) have been used to determine the phasing of implementation of the different options, such that those options with the greatest adverse environmental effects would only be implemented in more severe drought events.

Tankering of water

Tankering of water as an emergency measure to maintain water supplies has negligible adverse effects on biodiversity, archaeology and cultural heritage, or landscape and visual amenity. There is the potential for minor adverse effects with respect to local nuisance due to increased traffic on the roads and the resulting local impact on air quality and greenhouse gas emissions. Tanker movements and operations at tanker filling and discharge sites (which could involve 24-hour activity, lighting and use of pump generators) have the potential for minor to moderate temporary adverse effects regarding the wellbeing of local communities.

Tankering of water would result in minor beneficial effects in respect of human health through maintaining water supply during severe drought conditions. However, on the basis of experience from previous droughts, there is likely to be limited resource availability across the Southern Water supply area and neighbouring water companies are likely to be similarly affected and seeking to conserve their own resources, so the scale of beneficial effects is limited. Tankering is only considered to be viable at a very small, localised scale in each Water Resource Zone, although this would be more challenging in the Isle of Wight due to the need to get tankers delivered by sea as there is unlikely to be any surplus water supplies available on the island in a severe drought.

Cumulative impact assessment

The potential for cumulative effects between each drought management measure has also been assessed. Due to the uncertainty of timing of implementation of the drought management measures in an actual drought event, each of the drought management measures have been reviewed to assess whether they may have the potential for cumulative impact on the same receptors (human, physical or environmental). In the event of a drought, the findings of the SEA can be reviewed and an updated cumulative assessment can be made of the specific measures proposed for implementation at that time, based on the findings of the SEA.

For the majority of combinations of Drought Plan measures, cumulative effects are assessed as unlikely, but the assessment has identified some risks of cumulative adverse effects, for example, where both drought management measures draw on the same river, groundwater body or estuary. These cumulative effects are summarised below:

- The Lukely Brook Drought Permit option may have cumulative, in combination effects with the Eastern Yar Drought Order option could potentially lead to a slight increase in the overall adverse effects of the Eastern Yar Drought Order on the Medina estuary.
- The Caul Bourne and Shalcombe Drought Order measures in combination with one another could increase the risk of adverse effects on the chalk groundwater body from which both sources abstract and on the groundwater dependant Caul Bourne river. In turn, there could

be an increased risk of adverse effects on freshwater flows to the Shalfleet Creek and Newtown estuary.

The potential for cumulative effects between Southern Water's final Drought Plan and other water company's Drought Plans and Water Resources Management Plans has also been examined, along with other relevant plans and projects. The following drought management measure combinations have been assessed as having the potential for cumulative effects:

- Weir Wood reservoir Drought Order (summer only) and the River Medway Scheme Stage 3 Drought Permit (summer) with Sutton and East Surrey Water's Bough Beech reservoir / River Eden Drought Permit
- North Arundel Drought Order with Portsmouth Water's nearby "Source S" borehole Drought Permit
- Concurrent implementation of Temporary Use Bans and/or Drought Orders to ban non-essential water use by neighbouring water companies has the potential to increase the risk of adverse effects on population, recreation and landscape/townscapes, but equally may provide greater environmental benefits to certain water bodies and catchments where there are abstractions by more than one water company.
- Concurrent implementation of an Emergency Drought Order by other neighbouring water companies would possibly place additional adverse effects on population and human health.
- No temporary emergency desalination plants have been identified in any other current neighbouring water company Drought Plans, so no cumulative effects are currently anticipated. This assessment of cumulative effects has been subject to some limitations because other water company plans are currently being updated and revised in light of public consultation on their draft plans. In-combination effects will, therefore, need to be reviewed and re-assessed as necessary at the time of implementation of any Drought Plan measures.

Role of SEA in developing the overall phasing of drought management measures

The SEA findings as summarised above have helped to inform the overall phasing of drought management measures in the draft Drought Plan, with those demand management measures with negligible to minor adverse effects being introduced during impending drought conditions alongside a number of supply augmentation options with negligible to minor adverse effects. As drought conditions intensify, demand management measures with minor adverse effects would be implemented first followed by those supply augmentation measures with minor adverse effects. If severe drought conditions arise, the SEA has indicated those measures with moderate adverse effects that should be considered ahead of those measures that have major adverse effects identified.

Mitigation and monitoring

During implementation of a specific drought management measure, appropriate monitoring will be undertaken to track any potential environmental and/or social effects which will in turn trigger deployment of suitable and practicable mitigation measures as may be available. Monitoring and mitigation measures for each of the drought management measures have been considered as part of the development of the final Drought Plan. The SEA has taken account of the mitigation measures in assessing the residual effects of each drought management measure. This included taking account of the specific monitoring and mitigation packages agreed between Southern Water and the Environment Agency as part of a Section 20 Agreement signed in March 2018 in relation to the Test Surface Water Drought Permit/Order, the Candover Augmentation Scheme Drought Order and the Lower Itchen sources Drought Order.

Additional mitigation measures will be put in place if monitoring indicates that further management of adverse impacts is required. Prior to implementation of any Drought Plan measures, Southern Water will review the specific requirements for environmental monitoring and mitigation in consultation with regulatory bodies and relevant stakeholders who may be affected or have a role in representing customers and/or the environment.

Consultation

The public, regulatory bodies and stakeholders were invited to provide comments on the SEA Environmental Report alongside expressing their views on Southern Water's draft Drought Plan. The SEA Environmental Report has been updated in light of the comments received on the draft plan as well to take account of revisions made to the Drought Plan as a result of the consultation process. Comments received on the SEA of the draft Drought Plan and the SEA of the revised draft Drought Plan have been addressed in the final Drought Plan SEA Environmental Report.