Draft Drought Plan

Non technical summary

2022-2027

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WONDERFUL ON TAP

SEVERN TRENT

Section 1 Introduction

1.1 About Severn Trent

Our purpose is to take care of one of life's essentials, delivering an outstanding customer experience, best value service and environmental leadership. We are one of the largest water companies in the country and provide high quality drinking water and sewerage services (taking wastewater away) in the Midlands.

1.2 What is a drought?

Droughts are naturally occurring events. There is no single definition of drought, but all droughts involve an extended period of lower than average rainfall. Whether the impact of any particular drought falls on the environment, on public water supply or on other water users in the wider economy will depend on the individual characteristics of each drought. All droughts differ in severity, extent and duration.

For the purposes of this drought plan, we are referring to an event that lasts a minimum of two or three months. This means that a few days or weeks of particularly hot and / or dry weather do not constitute a drought. Periods of this sort will class as heatwaves if there are prolonged periods of higher than average temperatures. Heatwaves can cause water companies short term issues by drawing down levels in treated water reservoirs. However, events like this are too short term to fall within the scope of this plan.

1.3 What is a Drought Plan?

Droughts are naturally occurring events and we plan to minimise the impacts that they might have. We produce a drought plan to explain how we will manage both supplies and demand for water during a drought in our region. Our plan aims to balance the interests of customers, the environment and the wider economy. The plan helps us and our stakeholders to make the right decisions at the right time and shows how we will provide a continuous supply of drinking water to our customers during a drought.

We are legally required to prepare and maintain a drought plan. We are also required to consult with the public on the content of the plan, assess the representations we receive and prepare our statement of response within 15 weeks of the draft plan publication date.

1.4 Overview of process

The Environment Agency 'drought plan process flow diagram' provides a useful overview of the drought plan process. We have reproduced it in Figure 1 below:

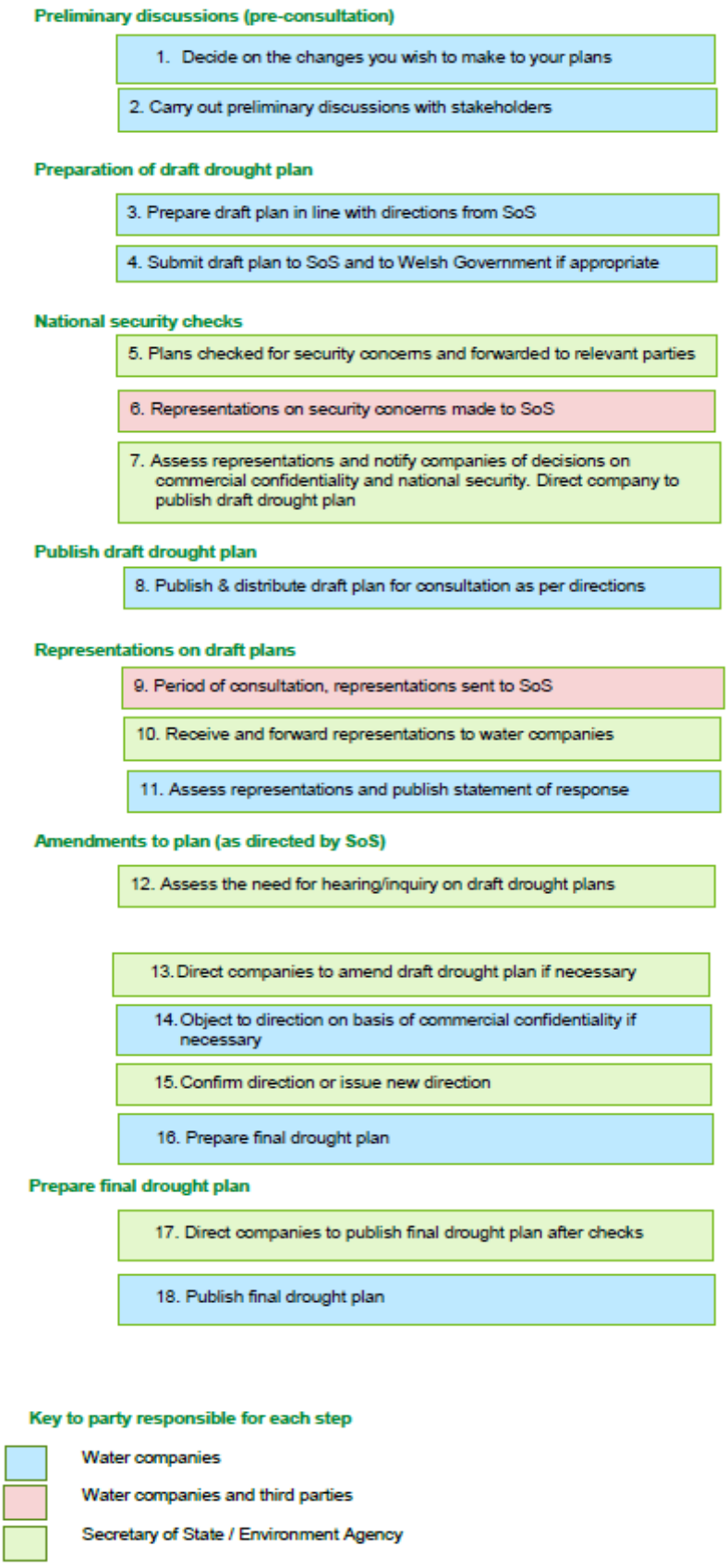

Figure 1: Environment Agency's 'drought plan process flow diagram'

We have planned our system so that it can withstand any drought that is as severe as those we have seen over the last 95 years. We have also tested our investment proposals against a range of plausible future droughts, some of which are more severe than those we have seen in the historic record. We are confident that our plans represent a good balance between cost, environment and resilience to droughts.

1.5 Levels of service

The levels of service that our customers can expect as a response to drought are:

- We will restrict our customers' use of water, on average, no more than three times every 100 years. This applies to both temporary use bans and non-essential use bans. A temporary use ban applies to household customers and is similar to what we used to call a hosepipe ban. A non-essential use ban applies to non-household customers, for example commercial car washing or window cleaning businesses
- We consider that rota cuts / standpipes for our customers are unacceptable. A rota cut means only supplying piped water to properties for a certain number of hours each day. A standpipe is an emergency measure that means people get no water piped to their property but have to fill up containers from a communal pipe. As we would only need to consider using such measures in an extremely severe drought we do not have a planned frequency for them

1.6 Customer and stakeholder views

We have sought the views of our customers and stakeholders on drought resilience. For example, we presented our drought resilience work at external stakeholder forum meetings such as the multi stakeholder Water Resource Management Plan 2019 event in Coventry on 6th October 2017 and through research conducted following the hot weather and high demand during the initial Covid-19 lockdown in 2020. In addition to this we have sought customers' views on the priority that they place on never having standpipes / rota cuts. In summary the customers we engaged generally felt that:

- Drought is not an issue they anticipate will affect the UK
- Due to the perceived minimal impact of temporary use ban restrictions they consider the current frequency acceptable
- They do not see non-essential use bans as having direct impact on them, but worry about the impact on businesses
- Standpipes / rota cuts are extreme, although probably proportionate and very unlikely to occur (we described the frequency of this as 'never / once every 200 years)'

We are running our public consultation on this drought plan for eight weeks after receiving approval to commence the consultation. We will produce our statement of response (SoR) within seven weeks of the public consultation ending. We intend to publish our final drought plan, subject to approval, at the end of 2021 / early 2022.

Section 2 Drought scenarios and drought triggers

2.1 Historic droughts and other drought scenarios

When preparing this plan we have considered a wide range of drought scenarios. Our approach considers not only the worst droughts in the 1920 to 2014 record but also:

- late 19th Century droughts
- drought response surfaces – which is a technique suggested by the Environment Agency and used by other water companies
- drought scenarios generated using statistical techniques

2.2 Drought triggers and data sources

There are a number of indicators that a drought period is developing. We monitor the following indicators to identify whether our region is experiencing drought conditions:

- Reservoir storage
- River flows
- Groundwater levels
- Rainfall totals and particularly comparisons against long term averages
- Soil moisture deficit (which is a measure of how dry the soil is) – when this is high it indicates that drought conditions may be developing

As part of our normal operations we also monitor:

- Levels of customer demand
- Leakage
- The quantities of abstraction at surface and groundwater sources

Reservoir drought triggers

We manage droughts by using reservoir drought triggers in the part of our region where most (over 85%) of our customers live. To take the appropriate drought management action at the correct time we monitor reservoir levels and quickly identify when any of these levels enter into the specified trigger zones. Figure 2 below illustrates this approach. For example, it shows our drought trigger zones for one of our reservoirs:

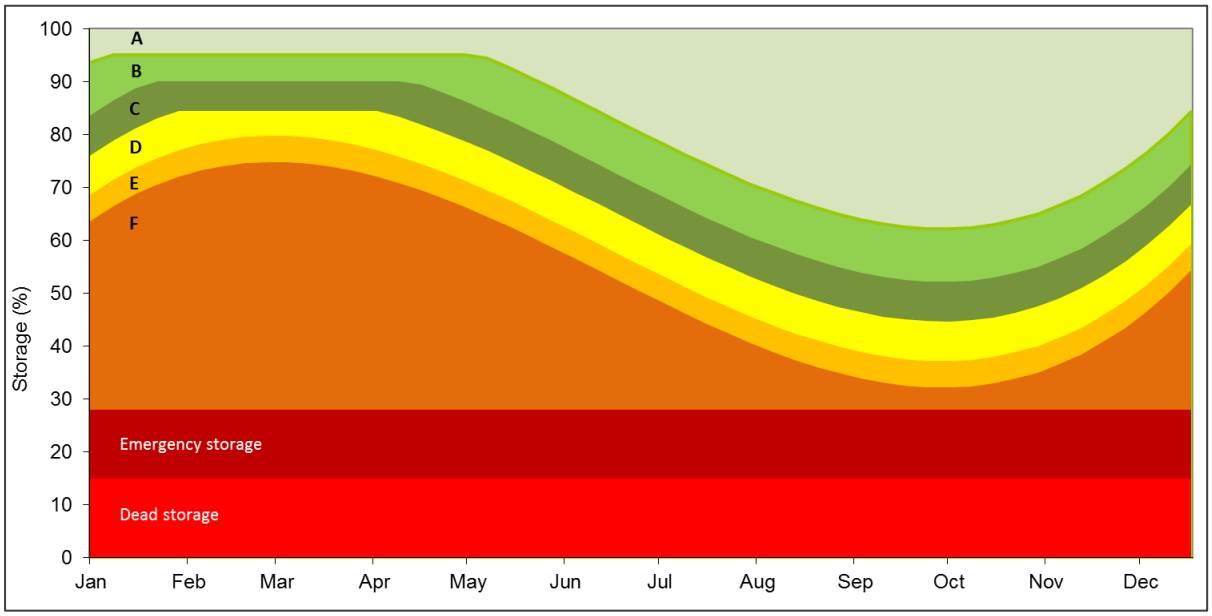

Figure 2: Graph showing drought trigger zones for one of our reservoirs

We use a slightly different approach in our other areas because we do not use reservoirs to supply customers in these other areas. However, all of our customers receive the levels of service described earlier and the general approach we take is consistent across our company.

Water company members of Water Resources West have agreed to consistently adopt Level 1 to 4 definitions to categorise their drought actions. The Level definitions encompass more than one of our drought trigger zones in certain instances. We will continue to use drought trigger zones internally to manage our operations and actions in a drought and detail both Level and drought trigger information in this plan. Table 1 details our drought trigger zone definitions and how these relate to the Level 1 - 4 drought restrictions.

Table 1 Definitions of the drought trigger zones

Drought trigger zone	Drought restriction level	Comment
A	1	Above normal - storage is above average for the time of year
B		Normal - storage is in the average range for the time of year
C		Below normal - storage is below average for the time of year
D	2	Low storage – storage is low for the time of year
E	2/3	Notably low storage - storage is notably low for the time of year. If storage is in this zone for more than 7 days between April and October we expect to implement a TUB. On average, we would not expect more than 3 of these in 100 years. We may also need to implement drought permits in this zone
F	3	Exceptionally low storage - storage is exceptionally low for the time of year. In this zone we consider, and potentially implement, drought orders to restrict non-essential demand If necessary, we would then consider the use all possible actions to avoid emergency drought orders.
Emergency storage	4	If storage ever reached this level we would refer to our emergency contingency plans rather than the drought plan

Section 3 Drought Actions

3.1 Demand side actions

We call actions that could reduce customer demand or leakage 'demand side actions'. We consider that demand side actions can be applied anywhere in our supply region. However, we will select the appropriate combination of options and target them depending on the extent to which different parts of our region are affected by drought. The following list shows some of the options available to us:

- Raise awareness within the company
- Liaise with the Environment Agency and other stakeholders about emerging drought and flexibility of available options
- Closely monitor demand, flows and abstraction/ releases
- Increase leakage detection
- Increase water conservation campaign (e.g. extra distribution of water saving devices or increased numbers of water audits)
- High profile promotion of meter option
- Media appeals for customer restraint

And, in the most severe drought conditions:

- Temporary water use restrictions which affect our household customers and
- Restrictions on non-essential use which affect non household (e.g. business) customers

3.2 Supply side actions

We call actions that could increase our supply of water 'supply side actions'. We can implement most of these actions without any special permissions but there are some options which need either Government or Environment Agency approval.

3.3 Drought orders and permits

Drought permits and drought orders allow us to abstract and / or discharge water in different ways to what we do in non-drought conditions. We have prepared our drought plan so that we will need to implement these measures as infrequently as is reasonably possible. In this section, when we talk about drought orders, we refer to ordinary drought orders and not emergency drought orders. In a drought we may have to apply for drought permits or drought orders at the following locations:

- On the River Avon and River Leam
- In the River Derwent catchment
- In the River Churnet catchment
- In the River Wye catchment
- In the River Severn catchment (site G[1])
- In the River Dove catchment

Section 4 Extreme Drought Actions

In the instance of an extreme drought, we have identified actions that we could implement to delay the need for severe drought restrictions i.e. rota cuts / standpipes. These are actions that we could take in the event on an extreme drought, after using non-essential use drought bans and before needing to apply for and implement emergency restrictions. We have identified actions that are/will:

- Practical to implement during an extreme drought
- Likely to be temporary
- Technically feasible
- Generally not result in permanent increases to deployable output

Section 5 Management and communications strategy

5.1 Management structure / roles and responsibilities

It is essential that we have a clear management chain and line of communication. This is necessary so we can make informed decisions quickly and effectively and can agree and implement these actions. Overall control of our response to a drought is managed internally by our Drought Action Team (DAT).

5.2 Communications plan

It is vital that we have a clear communications route to our customers and other stakeholders so that we communicate the correct messages at the correct time. Our draft 2022-27 drought plan sets out the communications plan that we will follow at different stages before, during and after a drought. Effective and targeted agile communications can help to reduce demand in a drought, for example, by raising customer awareness of the limited availability of water resources. Conversely, poorly prepared messages can have a detrimental effect on the public response to appeals for restraint.

External methods of communication available to us include social media, text messaging, emails, leafleting, mailed letters, radio, television, local and national press and by updating our website. Our drought communications will:

- Show customers that their contribution to water efficiency is worthwhile
- Explain to customers in simple terms how they can save water
- Demonstrate that we are doing our bit to manage water resources wisely

[1] Site name removed for security purposes

- Maintain confidence and customer trust

Section 6 Environmental assessment and mitigation

We have produced a Strategic Environmental Assessment (SEA), a Habitats Regulations Assessment (HRA) and a Water Framework Directive (WFD) assessment to accompany this draft drought plan. We have also prepared environmental assessment reports that provide comprehensive details of the potential effects of the drought permits and drought orders listed in section 3.3. We have also considered numerous environmental mitigation measures. The following list shows generic mitigation measures that can apply to any location and that we will consider if we have to implement a drought permit or drought order:

- Fish rescue
- Aeration (for example, of discharges)
- Reduction of other abstractions, if possible
- Releases of water from reservoirs for environmental purposes
- Other forms of flow augmentation (from rarely used / emergency / resilience sources)
- Increase the frequency / coverage of monitoring – this constitutes 'in- drought' monitoring
- Ensure there is adequate 'post-drought monitoring'
- Habitat restoration

Section 7 Post-drought actions

We define the end of a drought as when our water resources availability has returned to 'normal'. We will monitor the indicators listed in section 2.2 and these will indicate to us when the drought has ended. Once normal conditions have resumed and all restrictions lifted, our Drought Action Team will undertake a review of our drought management processes against those as outlined in this drought plan. This post-drought review is to learn lessons, review the effectiveness of our drought planning, communications, drought management and environmental management.