



Managing your water supply in a drought

Our draft Drought Plan 2021:
Summary



Spring 2021



Water is essential for all our lives. Every day we use water for drinking and routine activities such as washing, cooking, and recreation. It's also vital for running schools, hospitals, and services such as the Fire Service. And for businesses too – not just those associated with water-use, such as car washes, brewers, and hairdressers, but all businesses. It's our job to provide a reliable supply of safe drinking water to around 10 million household customers and 215,000 businesses in London and across the Thames Valley.

We plan ahead to make sure we can provide a secure and sustainable supply of water to our customers during periods of dry weather and take into account changes to our climate. However, we can't plan for all eventualities. During extended periods of low rainfall our water supplies can become depleted, and we may need to take actions to continue to provide essential supplies of water, while protecting the environment.

Our Drought Plan sets out the actions we would take, and when we would take them. It outlines what we'd do to inform customers about a drought; how we'd work with customers to reduce their water use; the restrictions we'd place on households and businesses; and how we'd maintain customers' drinking water supply by using additional sources of water as well as taking more from the environment and other sources.



Our Water Resources Management Plan 2019 considers future challenges including population growth and the impacts of climate change and it sets out the significant investment that is needed in new resources to ensure we can continue to provide a secure and sustainable water supply to 2100.

We are updating our Drought Plan

This document is a summary of our draft Drought Plan 2021.

In it we explain:

Page 4 What is a drought?

Page 5 Your water supply and how it could be affected in a drought

Page 6 How do we know when a drought is developing?

Page 7 What happens in a drought?

Page 8 Actions we'll take in a drought

You can find our full draft Drought Plan here: thameswater.co.uk/droughtplan.

How we develop our Drought Plan



Our last Drought Plan was published in 2020.



We've refreshed our Plan, taking account of revised government guidelines, and updated information on our supply schemes. We've consulted stakeholders and worked closely with other companies in the South East.



We submitted our draft Drought Plan to the Secretary of State (Defra) on 1 April 2021.



We'll hold a public consultation on our draft Plan. This will start following approval from Defra.



We'll review feedback to the consultation, produce a Statement of Response, and update our draft Plan.



We'll send the updated draft Plan to Defra for approval.

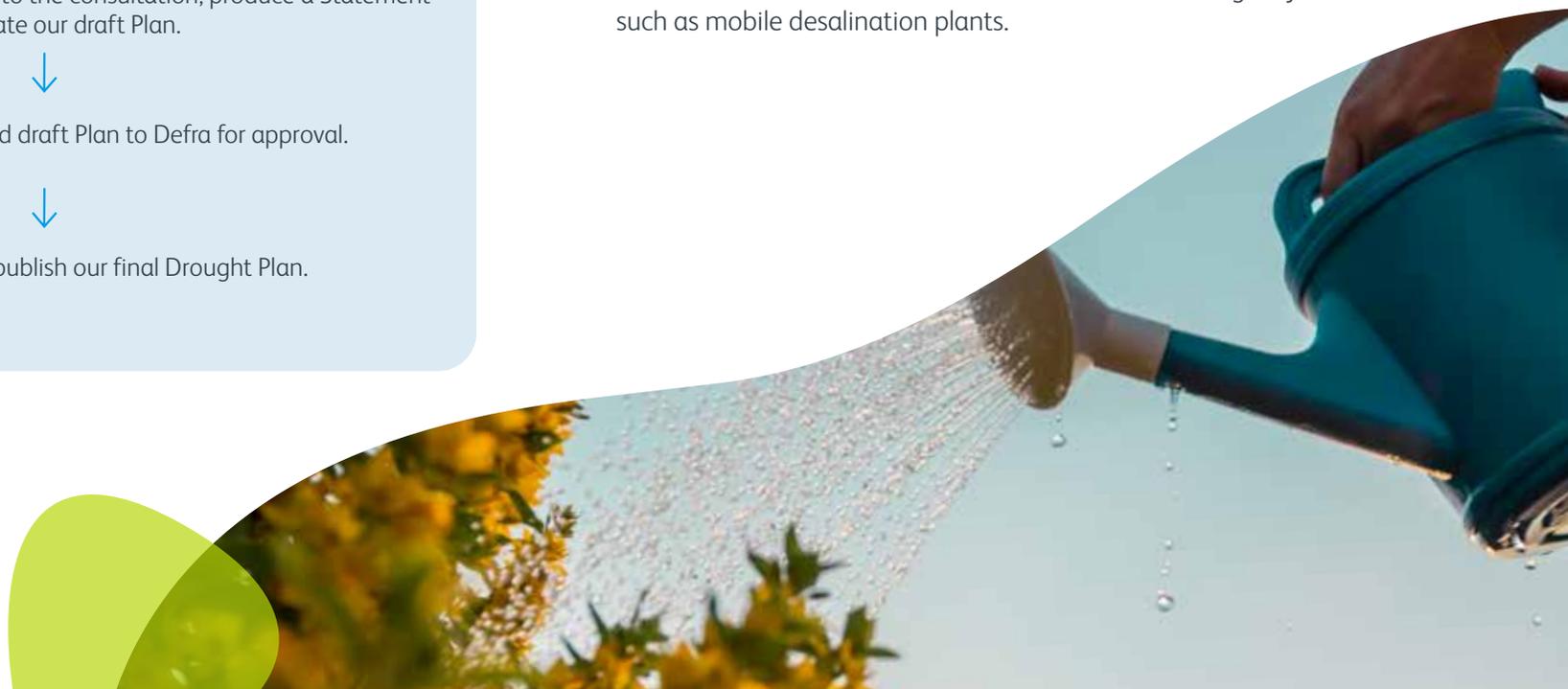


Once approved, we'll publish our final Drought Plan.

What's new?

Here is a summary of the main changes to our Drought Plan:

- We've tested our Plan to understand how we can cope in more severe droughts than we've experienced in the past.
- We've updated our levels of service – the frequency that we expect to need to apply water use restrictions. Temporary Use Ban (TUB) restrictions (see page 8) will now be implemented at the same time as applied by the other water companies in the South East.
- We've agreed to take a coordinated approach with the other water companies in the South East if water use restrictions are needed, including aligning any exemptions that may be applied.
- Based on an updated assessment, we've reduced the amount of water that can be supplied by the Thames Gateway Water Treatment Works (the desalination plant) to 100 MI/d and removed the Hoddesdon transfer scheme, as it is no longer operational.
- We've developed additional measures for the most serious droughts, referred to as 'More Before Level 4 measures', these include significant reductions in water use and the use of additional emergency water sources such as mobile desalination plants.



What is a drought?

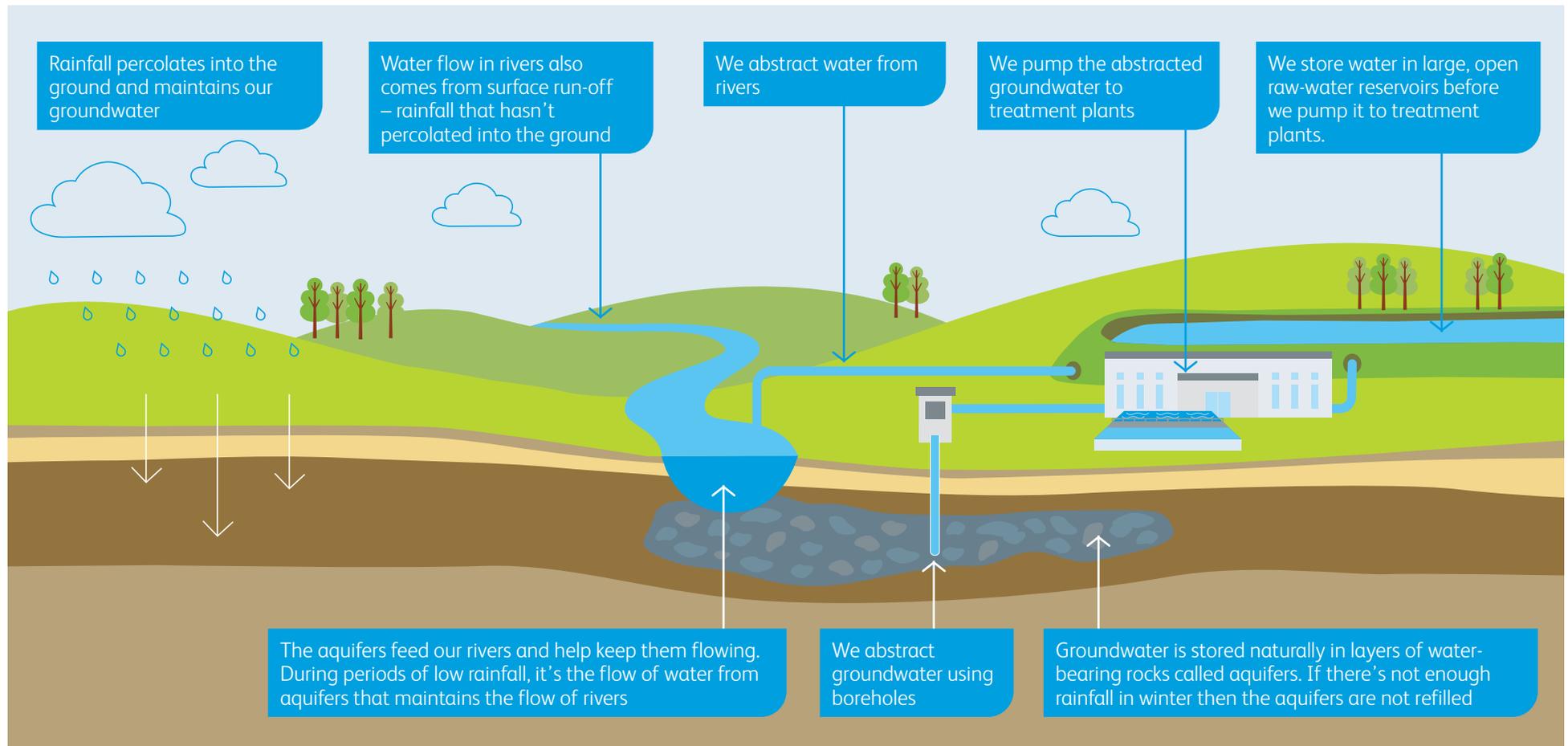
The water we use for public water supply relies on the weather, specifically rain. Most people think we have plenty of rain, but it actually rains less in London than in Istanbul, Sydney, or Barcelona.

A drought is a prolonged period of abnormally low rainfall. Droughts aren't caused by a few dry weeks, and they can't be solved by a few wet ones. We need regular rainfall throughout the year to make sure we always have enough water. Winter rainfall is really important, as it refills the natural underground aquifers that fill up the

rivers. Summer rain is largely used up by plants and lost through evaporation leaving very little available to recharge groundwater sources.

Every drought differs in terms of how long it lasts, how intense it is and the areas it affects. In our area, the worst droughts have followed two consecutive winters of below average rainfall. The last major drought in our supply area was in 1975-76.

The diagram below explains why such weather patterns cause problems.



Droughts can affect different water users in different ways and happen at varying times. For farmers, a drought can occur after just a few weeks of dry and sunny weather during the growing season, whereas a drought that affects public water supply can take many months of below average rainfall.

Your water supply and how it could be affected in a drought

Your water comes from rivers and groundwater and is either stored in large reservoirs until needed or treated and put directly into supply. The water is always treated to a high standard before it reaches your tap.

Thames Water's supply area is divided into six water resource zones: London; Swindon and Oxfordshire; Kennet Valley; Guildford; Slough, Wycombe and Aylesbury; and Henley. Water can be moved around in each zone and, in some cases, between

zones. A drought can affect each zone differently, depending on where the water comes from and how those sources respond to different types of droughts. This is why during a drought one area may have different usage restrictions to another.

The map shows our water supply area, the water resource zones and the main sources of water in each zone.



- London** – Water is mainly taken from the River Thames and the River Lee and stored in reservoirs in south-west London and the Lee Valley. The remainder (roughly 20 percent) comes from groundwater. We also have a desalination plant in London for use in drought.
- Swindon and Oxfordshire** – Water is mainly groundwater (60 percent) taken from the upper Kennet Valley and the Cotswolds, and we have a water main from Gatehampton. We also take water from the River Thames and have a reservoir at Farmoor, near Oxford.
- Kennet Valley** – Some water is pumped directly from the River Kennet to treatment works, and other supplies are from groundwater.
- Guildford** – Some water is pumped directly from the River Wey to treatment works, and other supplies are from groundwater.
- Slough, Wycombe and Aylesbury** – All water comes from groundwater.
- Henley** – All water comes from groundwater.

How do we know when a drought is developing?

Droughts develop over a period of months, during which time river flows, groundwater levels and the amount of water stored in reservoirs fall below the normal levels for the time of year. We constantly monitor water levels in our region – this gives us early warning of when a drought might develop and, once it's begun, how severe it could become. Every drought is different in terms of how long it lasts, how intense it is, and the areas it affects. We use scenarios of different patterns of rainfall and water usage to help us decide on what we need to do.

To identify a potential drought, we:

- Look at rainfall records
- Analyse groundwater levels – the lower the level, the worse the drought
- Analyse river flows – these depend on baseflow from aquifers and are supplemented by recent rainfall
- Monitor the amount of water stored in reservoirs – this is critical to how we'll cope in a prolonged drought

In a drought we follow a series of 'protocols' – decision-making steps that guide the actions we need to take – before a drought happens, as a drought develops, during a drought and after levels have recovered. The protocols are designed to make sure we have enough time to plan and take action and to help us avoid or minimise the need for emergency measures. An important part of the protocols is clear and timely communications with customers to explain the situation and how it might evolve and to ask for their help and support.

We've used historic weather records, equivalent of many thousands of years of weather data, to assess how vulnerable our system is, or parts of it are, to drought.

The assessments show that all our water resource zones are resilient to severe drought, but we'd need to use Drought Permits and Orders (see page 8) for extended periods of time. This reliance on Drought Permits for long periods would have a significant adverse impact on the environment, and Drought Orders could impact businesses.

In order to meet the challenge of potentially very severe droughts in the future, we need to develop additional water sources, to help to protect our customers' water supply and also the environment. Investment in new sources of water, as set out in our Water Resources Management Plan (WRMP) – our long term plan to ensure we can provide a secure and sustainable water supply to 2100, will enable us to become resilient to droughts of a severity of 1:200 years by 2030/31 and droughts of 1:500 years by 2040.



What happens in a drought?

Good communications with our customers are more vital than ever in a drought. We need to keep everyone informed and let customers know what they can do to help and if water-use restrictions are likely. We'll aim to start our drought communications campaign well before restrictions are needed.

Because long-term weather forecasts aren't fully reliable, we'll need to explain the degree of uncertainty and the need to plan responsibly for the worst case. To reach as many people as possible, we'll use newspapers, radio, and TV as well as our website and social media, providing regular updates on the drought situation and advice on saving water. If the drought continues, we'll extend our activity and use adverts and other methods to raise the profile.

We'll also try to reduce the amount of water that we and our customers use – taking actions often referred to as 'demand measures'. As part of our normal day to-day operations, we aim to use our water resources efficiently. For instance, we work hard to reduce the amount of water lost through our water pipes and our customers' pipes through leakage. We encourage our customers to use water wisely, providing a range of free water-saving devices and giving advice on how to conserve supplies. And we also install free water meters, which encourage people to use water sparingly and help reduce their bills. In a drought we would step up some of these activities.

Alongside activities to reduce water use, we'll also take actions to increase the amount of water we have. These include:

- Using existing water sources that are more resistant to drought. For example, in London and the Swindon and Oxfordshire water resource zones, we might use more groundwater to conserve the water stored in reservoirs.
- Starting up drought schemes, such as using the desalination plant located in East London, which takes water from the tidal part of the River Thames and removes the salt to produce drinking water, and the North London Artificial Recharge Scheme, which stores surplus winter supplies in the deep chalk aquifer beneath the capital for use in a drought period.
- Seeking permission from the environmental regulator to take more water from the environment, via Drought Permits. Because of the potential harm to the environment, we need to have done everything else we can before asking to use Drought Permits. We aim to prioritise the Permits we use, selecting those with a lesser impact on the environment whenever possible.

A drought is unlikely to be limited to the Thames Water area, so we'll work with other water companies in the South East to ensure consistent messaging and coordination of water use restrictions as well as sharing resources as far as possible.

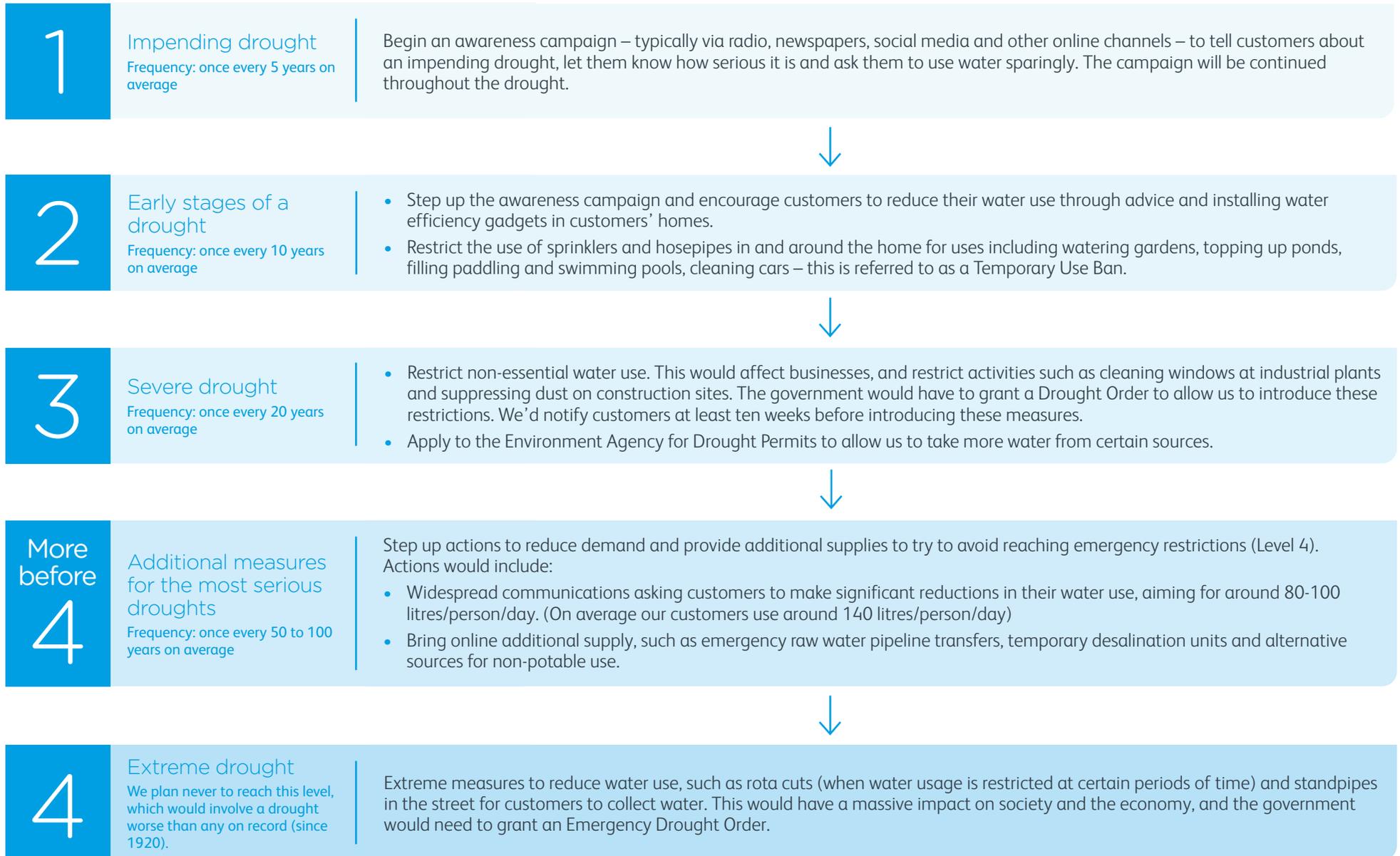
Watering the garden or washing your car with a hosepipe can use a massive 225 litres of water in just 15 minutes.

That's like flushing the toilet 25 times



Actions we'll take in a drought

Our Drought Plan is based on our levels of service to customers. These set out how often, and to what extent, customers should expect restrictions on their water usage. We have four escalating levels – these levels and the actions that we'll take at each one are explained below.



Thank you for taking the time to read through this document. If you'd like to read our full Drought Plan, please visit thameswater.co.uk/droughtplan

Our draft Drought Plan has 3 parts:

- 1 Summary (this document)
- 2 Main Report – Executive summary and Sections 1-10
- 3 Technical appendices A to M – These include environmental assessments of our Plan: Strategic Environmental Assessment and Habitats Regulation Assessment