Drought Plan 2022: Annex 2
Drought actions compendium

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from Southern Water

Contents

1. Introduction

The following document contains further descriptive information on each of the actions used in the drought plan. This information is not included in the drought plan main document as it is not active operational content. The information sets out what the action is and provides summary information on when we would expect to use this type of measure, what impact it would have on supplies and how long this type of action takes to initiate. The drought actions are split into demand-side and supply-side actions. The demand-side actions aim to reduce the demand for water and the supply-side drought actions aim to increase the volume of water available.

2. Demand actions

2.1. Media campaigns

Summary	Media campaigns aimed at changing the behaviour of customers so that they are making efforts to save water, especially during summer months		
Initiating Trigger(s)	Level 1 SPI/SPEI Trigger 60 day Flow Trigger	**Drought Levels**	Level 1 - 4
Expected Impact	Less than 1% reduction in demand		
Lead Time	Level 1 - 1 week Level 2 - 2 to 6 weeks		

Campaigns to raise public awareness of water use can be carried out in a number of ways using a variety of different types of media. The central message is to urge customers to conserve water, especially during periods of drought. This message should be underpinned by an explanation of the prevailing water resource conditions and how the drought might continue to intensify. In addition, we may promote an enhanced offer of our water efficiency programme.

Under normal conditions we already carry out water efficiency household audits and retrofits as well as water wise talks to schools and community groups.

Once we enter a Level 1 drought we will seek to carry out further water efficiency actions. We will engage with partner organisations to ensure a co-ordinated approach to interventions. We will initiate discussions with local authorities regarding watering regimes for public parks and gardens and we will carry out further media campaigns to encourage water efficiency. It is expected that the lead in time for these actions will be one week.

Once we enter a Level 2 drought we will carry out an enhanced media campaign to publicise restrictions and encourage water savings. We expect basic enhanced messaging to take about two weeks' lead-in time and a full campaign to take between four and six weeks' lead-in time. Media campaigns to influence water use are set out in Section 3 of the drought plan

These interventions may not deliver significant demand savings when compared with other measures as there is strong reliance on customer collaboration. During the 2011-12 drought, water companies in the South East worked together to ensure that messages from companies to their customers were aligned. As part of the WRSE group, we will continue working with our neighbours to keep messaging consistent.

2.2. Leakage control

Summary	Enhanced leakage reduction by improving the detection and/or the repair time for all leaks to deliver higher water savings.		
Initiating Trigger(s)	Level 1 SPI/SPEI Trigger 60 day Flow Trigger	**Drought Levels**	Level 1 - 4
Expected Impact	Up to 1.5% on peak weekly demand following mild winters, limited benefit following cold dry winters.		
Lead Time	3 Months, would need to start in January or February of a dry winter to be ready for spring implementation		

As part of our normal operations, we have invested significantly in leakage reduction since 1992, which has yielded significant savings in water (Figure 2.1). We have committed to reducing leakage by 15% over AMP7 and by 50% by 2050 compared to the 3-year average level in 2019-20.

Our analysis suggests that it may be possible to reduce leakage by up to 1.5% on peak weekly demand after a mild winter. However, there is a lead-in time of approximately 3 months needed for training and resourcing staff to undertake additional leakage control activity. Thus, in a second consecutive mild winter, leakage reduction could be a useful tool during a drought.

A dry winter could be severe in temperature terms, and lead to increased leakage. If the winter were dry but severe in terms of the number and duration of periods of time when temperatures remained below zero continuously, then it is highly unlikely that leakage reductions of 1.5% could be achieved.

There is also evidence suggesting that leakage may increase during a drought as a result of soils drying out, resulting in ground movement and the differential movement of pipework that can exacerbate leakage from joints. Therefore, without additional leakage detection and repair resources, leakage might otherwise be expected to increase during drought years.

During droughts we will consider whether activity on leakage reduction should be enhanced by improving the detection and/or the repair time for all leaks to deliver higher water savings.

We will also include information on how we are managing leakage when we submit a drought permit application.

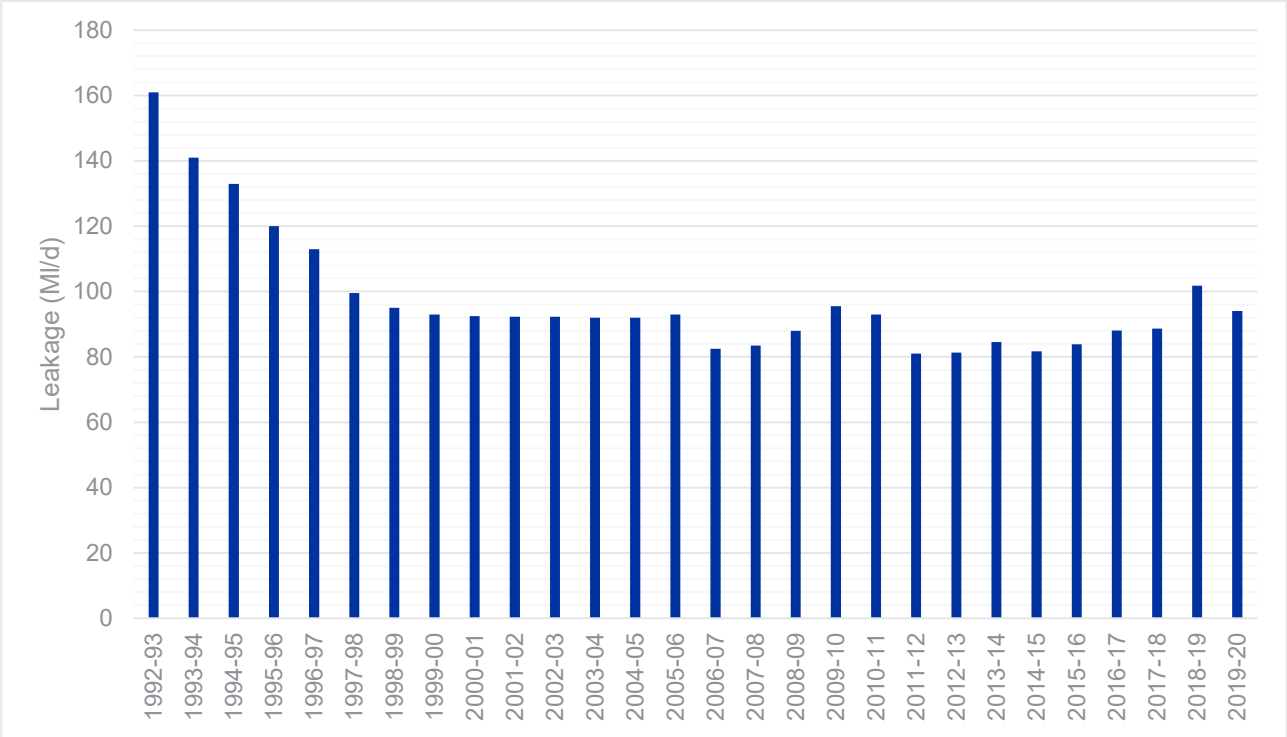

Figure 2-1: Our leakage since 1992

2.3. Mains pressure reduction/management

Summary	Adjustment of mains pressure to reduce leakage and water use.		
Initiating Trigger(s)	Level 2 Primary Triggers Test and Itchen HoF (Level 2)	**Drought Levels**	Level 1 - 4
Expected Impact	Negligible, mains pressure is already optimised across our WRZs		
Lead Time	1-3 months, would require period of monitoring and adjustment		

Mains pressure is already optimised across our WRZs and therefore the ability for further reduction is limited. In addition to reducing leakage, pressure reduction also reduces demand by restricting flow rates from open-tap devices such as garden taps. Further pressure reduction during periods of drought could be implemented where appropriate, but not to such an extent that pressures fail to meet the level of service for water pressure. We would implement mains pressure reduction gradually, whilst assessing the impact on our customers at each stage. Following extensive pressure management activity in recent years, the scope for further pressure reduction in our supply area is considered to be minimal.

The Fire and Rescue Service has previously expressed concerns that low mains water pressure might reduce its ability to tackle fires, although under normal drought conditions we would not expect pressures to fall below the DG2 reference level. Internal guidelines have been prepared for mains pressures to be further reduced under severe drought conditions where the supply-demand balance is breached, or is threatened to be breached. Should these circumstances arise, we would need to ensure that we consult extensively with the relevant Fire and Rescue Service at each stage of the process.

2.4. Temporary Use Ban

Summary	Temporary Use Bans		
Initiating Trigger(s)	Level 2 Primary Triggers Test and Itchen HoF (Level 2)	Drought Levels	Level 2
Expected Impact	Varies by area and season Western area – 5% reduction on peak weekly demand Central area – 5% reduction on peak weekly demand Eastern area – 3% reduction on peak weekly demand		
Lead Time	4-8 weeks after appeal for restraint (Level 1 Media Campaign)		

In the South East region water companies source their supplies of raw water in the following ways:

- River abstraction
- Reservoirs filled by river abstraction or impoundment of river water;
- Groundwater abstraction from boreholes and springs.

The percentage balance of these varies from company to company, and even within company areas and this causes variability in drought resilience and response.

The impact of drought is felt in different areas and over different timescales. An agricultural drought affecting crop growth, for example, can occur after a few weeks of dry and sunny weather over the growing season causing unseasonably dry soil. In contrast, a water resources drought affecting the availability of water for potable supplies, take much longer to develop, after several months of below average rainfall, particularly winter rainfall which is critical for replenishing most water resources. The low groundwater levels, reservoir levels, and river flows that result from this type of dry period reduce the water available and poses a risk to a water company's ability to supply its customers.

To manage this risk, water use restrictions are an important measure that water companies can use to reduce demand during drought. They not only enable companies to maintain essential supplies but also help to conserve water resources in periods of water shortages and reduce the environmental impacts of abstraction.

We will only impose water use restrictions upon our customers if they are absolutely necessary, and in accordance with our LoS for water supply. We fully appreciate the confusion that can be caused when one company introduces restrictions but a neighbouring company does not. One of the reasons for this is the spatial extent of the drought: it may be very localised and not extend beyond the area served by an individual water company. Clearly from a customer point of view, if water use restrictions need to be imposed then a simple and consistent approach should be adopted across the South East.

At the regional level, one water company may need to impose water use restrictions earlier in a drought than its neighbours, while another water company is able to withhold the imposition of restrictions until much later or not at all.

Water companies may have to react differently in terms of restrictions and their timing due to the following reasons.

- **Differing levels of drought severity across the region**: Whilst droughts across the South East will generally be caused by a regional trend of several months of below average rainfall, sub-regional differences in rainfall amount may cause differing levels of water shortage across the region. In other words, the need to impose restrictions for one company may not equally apply to another.

- **Differing vulnerabilities at WRZ level**: WRZs can be divided into those dependent upon:
  - River abstraction only;
  - Groundwater abstraction only;
  - Reservoirs filled by abstracting local river water or by impounding river water;
  - Various combinations of the above.

  This mix of WRZ types means that even if there were not a significant difference in drought severity across the region, WRZs will tend to react differently to the same drought, with certain WRZs experiencing higher levels of risk to potable supplies than others. That means in similar drought conditions, rivers, groundwater sources and reservoirs across the region can respond differently in terms of risk to supply. For example, a WRZ dependent on combined river abstraction and reservoir storage for supply may have a different level of risk to one based on groundwater abstraction. This difference in WRZ vulnerability has an impact both at the company level and regional level. A water company may need to introduce water use restrictions in its more vulnerable WRZs but not need to extend the ban to the remaining zones in its area of supply.

The introduction of the new powers in the form of the TUB in 2011 provided an opportunity for the water companies in the South East to review their Drought Plans with a view to finding a clearer, more consistent and more unified approach to introducing water use restrictions across the region than in the past.

TUBs are powers granted to water companies to impose restrictions on customers' water use. TUBs can be introduced quickly – seven days after an advert has been placed in newspapers in the area which will be affected. They predominantly focus on water use by domestic customers because this provides the largest water saving and helps protect public services and the economy.

Previously TUBs were referred to as 'hosepipe bans' but they were modified in 2010 under the Flood and Water Management Act to cover a wider range of restrictions. This legislation, which significantly widened the scope of the previous hosepipe ban powers, is:

- Section 76 of the Water Industry Act 1991 (Water Industry Act 1991), as amended by section 36 of the Flood and Water Management Act 2010 (FWMA 2010)
- The Water Use (Temporary Bans) Order 2010, which is a statutory instrument (No. 2231) providing definitions of words and phrases and certain exceptions to the categories of water use specified in section 76 of the Water Industry Act 1991

Under section 76(2) of Water Industry Act 1991 the widened range of uses of water that a water company can control without referring the decision to the Secretary of State are as set out below:

- Watering a garden using a hosepipe;
- Cleaning a private motor-vehicle using a hosepipe;
- Watering plants on domestic or other non-commercial premises using a hosepipe;
- Cleaning a private leisure boat using a hosepipe;
- Filling or maintaining a domestic swimming or paddling pool;
- Drawing water, using a hosepipe, for domestic recreational use;
- Filling or maintaining a domestic pond using a hosepipe;
- Filling or maintaining an ornamental fountain;
- Cleaning walls, or windows, of domestic premises using a hosepipe;
- Cleaning paths or patios using a hosepipe; and
- Cleaning other artificial outdoor surfaces using a hosepipe.

Most water use prohibited under a TUB applies to the use of water drawn through a hosepipe or similar apparatus.

Water Industry Act 1991 76(1) further states that "a water undertaker may prohibit one or more specified uses of water supplied by it if it thinks it is experiencing, or may experience, a serious shortage of water for distribution". Although this means there is no express link to drought when applying the above powers, a drought event is the most likely reason a company would experience a shortage of water for distribution.

Figure 2.2 below shows when we last imposed TUBs, previously known as hosepipe and sprinkler bans, in different parts of our supply area.

Historically water resources have tended to be more vulnerable to drought in our Eastern and Central areas and this is reflected in the history of demand interventions. The IOW WRZ has a high summer population which, coupled with its small aquifer and reliance upon transfers from the mainland, have also made it vulnerable to droughts in the past. We have used data from the last imposition of restrictions in 2012 (see Annex 5) to help indicate the likely water savings that resulted.

Since the 2011-12 drought all water companies in England and Wales, including SWS, have signed up to the 'UKWIR Code of Practice and Guidance on Water Use Restrictions' (2013)[1]. The code of practice presents common standards and approaches to restrictions and exemptions to ensure consistent and coherent messaging and communications between companies and customers, stakeholders, governments, regulators and the media.

The four principles are:

- Ensuring a consistent and transparent approach;
- Ensuring that water use restrictions are proportionate;
- Communicating clearly with customers and the wider public/users; and
- Considering representations in a fair way.

Under the 4th principle of the code of practice, we should apply an even-handed process for considering objections and representations from individuals or groups. The consultation on our 2019 Drought Plan provided customers with an opportunity to provide feedback and representations on our proposed phasing of restrictions.

[1] This UKWIR code of practice was updated in 2023 and is available at this link Update to the Drought Code of Practice 2013 (ukwir.org) This is the 2022 drought plan and therefore pre-dates the 2023 code of practice but, if we are required to use a drought code of practice, we will refer to the updated, 2023 code.

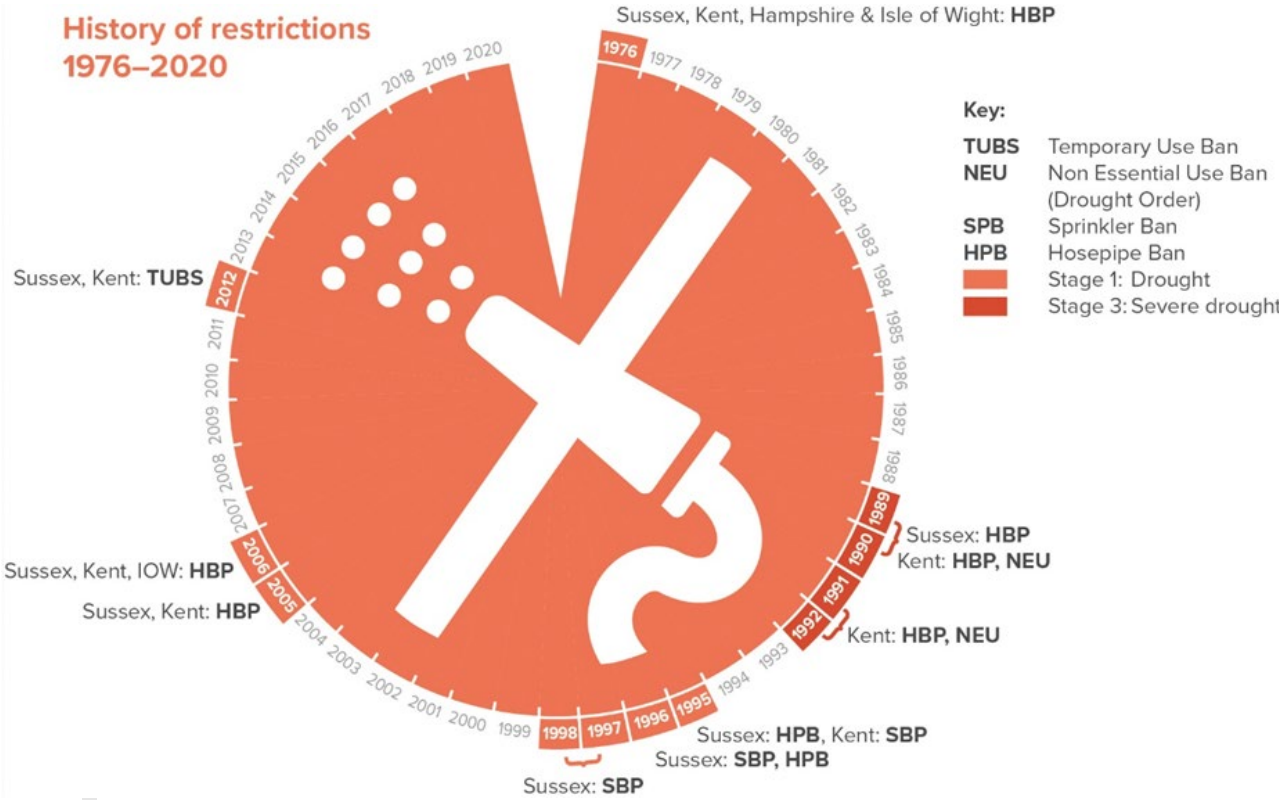

Figure 2-2: History of water use restrictions that we have imposed in different parts of our supply area.

The code also sets out five actions that should be followed by water companies in England and Wales:

- Companies, regulators and government to work together.
- Coordinate communications.
- Adopt a common phased approach, considering socio-economic factors.
- Adopt a common approach to exceptions.
- Promote understanding and good practice.

By signing up to the code of practice we agree to follow the principles and actions mentioned above.

2.4.1. Exemptions

Water companies can grant exemptions from these restrictions for customers and businesses. The types of exemptions to water restrictions that companies can offer can be defined as follows:

- Statutory - activities/water uses which are exempt from the legislation.
- Discretionary exemptions - activities/water uses which are not covered by a statutory exception but water companies can grant the use of a hosepipe under certain circumstances.

Discretionary exceptions can be further split into two categories:

- 'Universal' – these exceptions have been agreed by all companies who signed up to the Drought Code of Practice (A document which aims to ensure a common approach to drought management by UK Water companies). Such exceptions do not require customers to write or make representation to the water company to obtain permission; and

- ‘Other concessions’ – these are exceptions which individual water companies can choose to offer customers, depending on the particular circumstances. These exemptions do require customers to write or make representation to the water company to obtain permission.

The water companies in the South East have had formal meetings to discuss the development of their plans and ensure that they are implementing the powers as consistently as possible. The companies are committed to working collaboratively during periods of water shortages. In this context they have worked together to align the drought levels in their plans and to align as closely as possible the restrictions and exemptions that would be imposed when a TUB and a NEUB are implemented. These exemptions aim to minimise the impact on vulnerable customers and the economy. The exemptions from TUBs that are given in Table 2.3 below and the exemptions from NEUBs given in Table 2.4 reflect the agreements made by us and the other companies in the South East.

2.4.2. Representations

Our approach to handling representations, upon us giving notice of restrictions, is set out below. This is in accordance with section 76b (3) of the Water Industry Act 1991, which states that ‘The notice must give details of how to make representations about the proposed prohibition’. The code of practice and guidance for water companies on water use restrictions -2013 states that ‘Water companies will communicate clearly their intentions to implement water use restrictions in an appropriate and timely manner to customers and their representatives, regulators and adjacent water companies. Water companies will give due consideration to any information provided by customers’.

We will publish a public notice in regional newspapers and the London Gazette as part of the process to introduce TUBs. The notice will specify the method and timescale for customers to make representations and will normally be in writing to a named individual on the public notice. The timescale for responses, will be a minimum of 7 days (which is the time period allowed for under a drought order to restrict water use, as set out in Schedule 8 of the WRA 1991). This notice will also be published on our company website.

Information about restrictions would be communicated to customers and stakeholders through multiple channels, as described in Annex 6. We are confident that in getting the communications right and utilising all the channels available to us, we will be able to handle a large number of respondents. In the event that there was an unexpected number of respondents that caused the contact centre to be overwhelmed, we would move to mitigation measures.

2.4.3. Savings

For the purposes of the 2019 Drought Plan, we carried out analysis of the impacts of the demand restrictions that were applied by us during the 2005-06 drought, and estimated how this is likely to have changed as a result of increased metering. The 2012 event was not considered due to the exceptionally high rainfall that occurred almost immediately after the TUB was introduced and hence supressed any benefit the ban may have had. This assessment has accounted for the universal metering programme we implemented over AMP5. The detailed analysis is presented in Annex 5.

This analysis was repeated in 2020 to ensure continued robustness. The outcome of the analysis was that for all areas the previous analysis of the impact of TUBs and NEUBs continues to be valid and the effectiveness of demand restriction profile should continue to be used.

The estimated demand saving profiles for our Western (excluding the IOW) and Central areas are 5% for TUBs. The Eastern area is expected to have a lower saving in response to TUBs at around 3%.

Empirical models of household demand were developed for our three main supply areas. The methodology applied broadly follows the recommended methods contained within the EA's Drought Demand Modelling

Guidance, with a minor change surrounding the inclusion of time of year/sunshine hours as an explanatory factor. Furthermore, the models contain a significant enhancement to allow a quantified analysis of the impact of metering on summer peak demand. This incorporation of a demonstrably stable and accurate, but non-linear and multiplicative form of regression model meant that the impacts of metering on both underlying demand and demand response to weather could be modelled. This has allowed the response of the current, mostly metered, customer base to restrictions to be quantified.

Table 2.1: Exemptions from TUBs.

TUB Category	Statutory Exemptions	Discretionary Universal Exception (granted by all water companies)	Suggested Discretionary Concessional Exception (granted by individual water companies)
Watering a garden using a hosepipe.	Using a hosepipe to water a garden for health or safety reasons. In this category, the definition of 'a garden' includes 'an area of grass used for sport or recreation'. Therefore it should be noted that watering areas of grass, which are used for sport or recreation, is covered by a Statutory Exception for health & safety only in relation to the active strip/playing area, not the entire ground.	•Blue Badge holders on grounds of disability. •Use of an approved drip or trickle irrigation system fitted with a PRV and timer.	• To customers on the company's Vulnerable Customers List who have mobility issues but are not in possession of a Blue Badge. • To water newly laid turf for first 28 days.
Cleaning a private motor-vehicle using a hosepipe.	A 'private motor-vehicle' does not include: (1) a public service vehicle, as defined in section 1 of the Public Passenger Vehicles Act 1981 (c), and (2) a goods vehicle, as defined in section 192 of the Road Traffic Act 1988 (d).	• To Blue Badge holders on the grounds of disability. • Use of a hosepipe in the course of a business to clean private motor vehicles where this is done as a service to customers.	• To customers on the company's Vulnerable Customers List who have mobility issues but are not in possession of a Blue Badge.
Watering plants on a domestic or other non-commercial premises using a hosepipe.	Does not include watering plants that are: (1) grown or kept for sale or commercial use, or (2) that are part of a National Plant Collection or temporary garden or flower display.	• To Blue Badge holders on the grounds of disability. • Use of an approved drip or trickle irrigation system fitted with a PRV and timer.	• To customers on the company's Vulnerable Customers List who have mobility issues but are not in possession of a Blue Badge. • To water newly laid turf for first 28 days using drip irrigation.
Cleaning a private leisure boat using a hosepipe.	(1) Cleaning any area of a private leisure boat which, except for doors or windows, is enclosed by a roof and walls, (2) Using a hosepipe to clean a private leisure boat for health or safety reasons.	• Commercial cleaning. • Vessels of primary residence. • Cases where fouling is causing increased fuel consumption. • Engines designed to be cleaned with a hosepipe.	• To prevent or control the spread of non-native and/or invasive species.
	(1) Filling or maintaining a pool where necessary in the course of its construction	None.	None.

TUB Category	Statutory Exemptions	Discretionary Universal Exception (granted by all water companies)	Suggested Discretionary Concessional Exception (granted by individual water companies)
Filling or maintaining a domestic swimming or paddling pool.	(2) Filling or maintaining a pool using a hand-held container which is filled with water drawn directly from a tap. (3) Filling or maintaining a pool that is designed, constructed or adapted for use in the course of a programme of medical treatment. (4) Filling or maintaining a pool that is used for the purpose of decontaminating animals from infection or disease. (5) Filling or maintaining a pool used in the course of a programme of veterinary treatment. (6) Filling or maintaining a pool in which fish or other aquatic animals are being reared or kept in captivity		
Drawing water using a hosepipe for domestic recreational use.	None.	None.	None.
Filling or maintaining a domestic pond using a hosepipe.	Filling or maintaining a domestic pond in which fish or other aquatic animals are being reared or kept in captivity.	Blue Badge holders on the grounds of disability.	• To customers on the company's Vulnerable Customers List who have mobility issues but are not in possession of a Blue Badge
Filling or maintaining an ornamental fountain.	Filling or maintaining an ornamental fountain which is in or near a fish-pond and whose purpose is to supply sufficient oxygen to the water in the pond in order to keep the fish healthy.	None.	• To operate water features with religious significance.
Cleaning walls or windows of domestic premises using a hosepipe.	Using a hosepipe to clean the walls or windows of domestic premises for health and safety reasons.	• To Blue Badge holders on the grounds of disability. • Commercial cleaning.	• To customers on the company's Vulnerable Customers List who have mobility issues but are not in possession of a Blue Badge. • Where this is undertaken as a service to customers or part of a business.

TUB Category	Statutory Exemptions	Discretionary Universal Exception (granted by all water companies)	Suggested Discretionary Concessional Exception (granted by individual water companies)
Cleaning paths or patios using a hosepipe.	Using a hosepipe to clean paths or patios for health and safety reasons.	• To Blue Badge holders on the grounds of disability. • Commercial cleaning.	• To customers on the company's Vulnerable Customers List who have mobility issues but are not in possession of a Blue Badge.
Cleaning other artificial surfaces using a hosepipe.	Using a hosepipe to clean an artificial outdoor surface for health or safety reasons.	• To Blue Badge holders on the grounds of disability. • Commercial cleaning.	• To customers on the company's Vulnerable Customers List who have mobility issues but are not in possession of a Blue Badge.

This modelling demonstrated that the ratio of summer demand to underlying (winter) demand has decreased as a result of the universal metering programme, with the relative size of the summer peak (as calculated relative to winter demand) now approximately 35% lower for the Western and Central areas and 60% lower for the Eastern area than it was in the early to mid-2000s. This will impact the effectiveness of demand restrictions because discretionary water use is clearly now smaller as a percentage of total demand. It is worth noting that there was no observable response to the 2005 hosepipe ban on the fully metered IOW.

The models were able to accurately estimate the impact of restrictions on demand during the 2005-06 drought event and provide an estimate of the change as a result of increased metering. The estimated profile for the effectiveness of demand restrictions for the Western (excluding the IOW) and Central areas were estimated to be around 1% rising to 5% for TUBs (winter to summer profiles) and 3% rising to 8% for TUBs plus NEUBs. The Eastern area is expected to have a much lower response, at 0% rising to 3% for TUBs and 1% rising to 4% for TUBs plus NEUBs.

We have seen an increase in total DI during 2020-21, which can at least in part be attributed to the restrictions imposed due to COVID-19. It is likely that some of the trends we have seen during COVID-19 restrictions, such as increased home working, will continue even after the pandemic is over. However, the scale of the shift in the 'post COVID-19 normal' is not clear at the time of writing this. We will need to reassess the impact of TUBs on demand once we know how COVID-19 has permanently changed some of the consumption patterns.

We also have one of the most ambitious demand management plans in the UK water industry. We are aiming to reduce average per capita consumption (PCC) in our supply area from ca. 128 litres/head/day[2] in 2019-20 to 100 litres/head/day by 2039-40 as part of our Target100 programme. This will require reduction in both discretionary and non-discretionary use and is likely to impact the effectiveness of TUBs in future.

2.5. Drought order to restrict water use

Summary	Non Essential Use Bans to restrict water use		
Initiating Trigger(s)	Level 3 Primary Triggers Itchen Flow at 205Ml/d Test Total Flow at 310Ml/d	**Drought Levels**	Level 3
Expected Impact	Varies by area and season Phase 1: Western area – 8% reduction on peak weekly demand Central area – 8% reduction on peak weekly demand Eastern area – 4% reduction on peak weekly demand Phase 2: Unknown		
Lead Time	Phase 1 - Minimum of 8-12 weeks from TUB Phase 2 – Minimum of 4-8 weeks from Phase 1 NEUB drought order		

[2] This figure is based on the new leakage methodology that will be used to calculate annual water balance from AMP7 onward.

Following the introduction of TUBs and if a drought continues to worsen, water companies can also apply to the Secretary of State for the Environment to further increase the level of water restrictions with a drought order.

These are introduced in addition to TUBs and include restrictions on businesses which use water in their operations. Prior to applying for drought orders, to implement NEUBs, we would work closely with businesses and trade organisations to encourage them to use water wisely, and so delay the introduction of restrictions which could then impact on their operations. In some cases, the Government may hold a public inquiry before granting permission for a drought order.

Restrictions could be available for:

- watering outdoor plants on commercial premises;
- filling or maintaining a non-domestic swimming or paddling pool;
- filling or maintaining a pond;
- operating a mechanical vehicle-washer;
- cleaning any vehicle, boat, aircraft or railway rolling stock;
- cleaning non-domestic premises;
- cleaning a window of a non-domestic building;
- cleaning industrial plant;
- suppressing dust; and
- operating cisterns.

In order to grant a drought order under WRA 1991 73(2), the Secretary of State must be satisfied that:

'By reason of an exceptional shortage of rain, a serious deficiency of supplies of water in any area exists or is threatened'

More details on how we prepare a case to demonstrate an Exceptional Shortage of Rain (ESoR) in support of a Drought Permit or Order application is set out in section 3.8.2.

The potential timescales for introducing restrictions by recourse to a drought order are significantly longer than those for TUBs under the Water Industry Act 1991, and the Secretary of State may require a public inquiry or hearing to be held which can impact on timescales.

Under Schedule 8, paragraph 3(c) of the WRA 1991, the company must publish a notice of its application for a drought order to restrict water use, which shall state that objections to the application may be made to the Secretary of State within seven days from the date on which it is served or published.

2.5.1. Exemptions

Exemptions can be granted under certain conditions. These are given in Table 2.4.

Table 2.2: Drought order (NEUB) exemptions.

Drought Order Category	Statutory Exemptions	Universal Exception	Discretionary Exception	UKWIR Suggested Discretionary Exceptions
Watering outdoor plants on commercial premises	This includes plants which are in a pot or container that is outdoors or under cover and plants which are in the ground under cover. This does not include plants grown (i.e. cultivated or propagated) or kept for sale or commercial use or plants part of a National Plant Collection or temporary garden or flower display.	None.	Use of an approved drip or trickle irrigation system fitted with a PRV and timer is set for use in the evening or night.	Use of an approved drip or trickle irrigation system fitted with a PRV and timer
			Water newly bought plants for the first 28 days after the implementation of the ban.	Watering newly-bought plants
Filling or maintaining a non-domestic swimming or paddling pool	None. This restriction shall not apply to: • Pools open to the public (a pool is not open to the public if it may only be used by paying members of an affiliated club or organisation).	None.	None.	Swimming pools serving industrial training if considered justified.
				Swimming pools with covers.
				Pools with religious significance.
				Pools fitted with approved water conservation or recycling systems.

Drought Order Category	Statutory Exemptions	Universal Exception	Discretionary Exception	UKWIR Suggested Discretionary Exceptions
	• Filling or maintain a pool that is used by pupils of a school for swimming lessons. • filling or maintaining a pool where necessary in the course of construction. • filling or maintaining a pool using a hand-held container which is filled with water drawn directly from the tap. • filling or maintaining a pool designed, constructed or adapted for use in the course of a programme of medical treatment. • filling or maintaining a pool that is used to decontaminate animals from infections or disease. • filling or maintaining a pool used in the course of veterinary treatment. • filling or maintaining a pool in which fish or other aquatic animals are being reared or kept in captivity.			Pools that are subject to significant repair and innovation.
Filling or maintaining a pond	This restriction shall not apply to ponds in which fish or other aquatic animals are being reared or kept in captivity or to filling or maintaining the pond with a hand-held container which is filled with water directly from the tap.	Blue Badge holders on grounds of disability.	None.	Customers on the company's Vulnerable Customer List who have mobility issues but are not in possession of a Blue Badge.
Operating a mechanical vehicle washer	None	None	On biosecurity grounds	Washers which recycle water and thus use less than 23 litres per wash.

Drought Order Category	Statutory Exemptions	Universal Exception	Discretionary Exception	UKWIR Suggested Discretionary Exceptions
				On biosecurity grounds.
Cleaning any vehicle, boat, aircraft or railway rolling stock	Cleaning any vehicle, boat, aircraft or railway rolling stock for health and safety reasons	None	On biosecurity grounds	Low water use technologies.
				Small businesses whose sole operations are cleaning of vehicles using hosepipes.
				Those using vessels as a primary residence
				Cases where fouling of hulls causes fuel consumption.
				To remove graffiti.
				To prevent of control the spread of non-native and/or invasive species.
Cleaning any exterior part of a non-domestic building or non-domestic wall	Cleaning any exterior part of a non-domestic building or non-domestic wall for health and safety reasons	None.	To remove graffiti by applying to the wholesale supplier.	Small businesses whose sole operations are cleaning of buildings using hosepipes.
				Low water use technologies.
				To remove graffiti.
Cleaning a window of non-domestic building	Cleaning a window of non-domestic building using a hosepipe for health and safety reasons.	None.	Small businesses whose sole operations are cleaning of windows using hosepipes.	Small businesses whose sole operations are cleaning of windows using hosepipes.
Cleaning industrial plant	Cleaning industrial plant using a hosepipe for health and safety reasons.	None.	Biosecurity.	To remove graffiti.
Suppressing dust	Suppressing dust using a hosepipe for health and safety reasons.	None.	None.	None.
Operating cisterns on unoccupied buildings	None.	None.	None.	None.

2.5.2. Savings

Like the savings from TUBs, the savings that can be expected from a drought order to restrict water use are influenced by our universal metering programme. This has reduced overall demand and has the potential to reduce the savings from a drought order to restrict water use. The impact of restrictions will also be dependent upon prevailing demands and weather conditions and the level of media attention the drought may have received prior to introducing restrictions. As mentioned above, our Target100 programme is also likely to influence the amount of water savings that can be achieved.

Besides water savings from TUBs, the empirically based analysis that we carried out on the impacts of the demand restrictions that we applied during the 2005-06 drought, also estimated the demand savings for NEUBs from drought orders. As previously mentioned, the analysis considers both weather influences and the effect of metering.

In the Western and Central areas, it is apparent that the effects of the publicity surrounding the drought were cumulative over the two-year period, without any notable stepped change as a result of the drought order. This makes an exact evaluation of the impact of drought orders difficult, as it appears that a rapidly introduced ban might not have the same impact as the longer sequence of events and publicity generated during the 2005-06 drought. It is estimated that the use of NEUBs saves an additional 3% over the TUB in the Western and Central areas, bringing the total savings to 8%.

The Eastern area displayed little response to the drought order. The exact reasons for this are not known but are likely to be associated to different attitudes towards water saving. It is estimated that NEUBs save an additional 1%, bringing the total savings from TUBs and NEUBs to 4%.

2.5.3. Compensation

Under the Water Resources Act 1991, water company customers have no entitlement from water companies in respect of loss or damage sustained as a result of the implementation of drought orders. However our commitment to household customers also applies during drought events and we will work to honour the minimum standards of service that our customers can expect. Our guaranteed standards of service and associated compensation values can be found on our website at https://www.southernwater.co.uk/our-story/guaranteed-standards-of-service

People who suffer loss or damage as a result of a drought permit or order are entitled to compensation. The rules are set out in Schedule 9 to the WRA 1991.
Those who may claim are:

- the owners of the source
- all other persons interested in the source or adversely affected by the taking of the water

Under the rules of the act a claim may be made at any time not later than six months after the end of the period for which the permit or order authorises. Any disputes are referred by the claimant or applicant to the Upper Tribunal, and are not a matter dealt with at the hearing. The Upper Tribunal may make an award during the duration of the permit or order in respect of likely damage, though in so doing it may have regard to the amount of water which was likely to have been available to the claimant as against others.

When we advertise and consult on drought permit/order applications, to provide us with additional supplies in a drought, we will reference the above to ensure abstractors who are potentially impacted by the drought measures are made aware that they may make a claim for compensation to the Lands Tribunal. We will work with the EA at the time of making a permit application to ensure we have captured all abstractors downstream of drought permit/order sites that might be at risk of derogation due to drought permits/orders being implemented.

2.5.4. Phasing of restrictions on demand

We would introduce restrictions on demand in a phased manner. The precise order in which individual activities are implemented and whether implementation of each activity can be made, subject to qualifications, will have to be decided at the time considering all relevant circumstances including the supply-demand situation. It may thereafter be reviewed in the light of experience or changing circumstances. Nevertheless, we herein provide a summary of the indicative phasing of restrictions, covering both TUBs and a drought order to restrict water use as a guide (Table 2.3). The metrics which trigger each phase of restrictions are presented in Annex 4.

Table 2.3: Summary of indicative phasing of restrictions on demand.

Restriction activity	TUB / Drought Order	Level 1: Impending Drought	Level 2: Drought Conditions	Level 3: Severe drought conditions (Phase 1)	Level 3: Severe drought conditions (Phase 2)
Watering a garden using a hosepipe (includes parks; gardens open to public; lawns; grass verges; areas of grass used for sport or recreation; allotment gardens; any area of allotment used for non-commercial purposes; and any other green space).	TUB		✓	✓	✓
■ Including national or international sports events; grass surfaces used for sport or recreation where watering is undertaken in relation to particular playing or other surfaces designated by the company, for no more than 2 hours a week and only between the hours of 1900hrs and 0700hrs	TUB				✓
Cleaning a private motor-vehicle using a hosepipe	TUB		✓	✓	✓
■ Including businesses specialising in hand car-washing using hosepipes as part of their process	TUB				✓
Watering plants on domestic or other non-commercial premises using a hosepipe	TUB		✓	✓	✓
Cleaning a private leisure boat using a hosepipe	TUB		✓	✓	✓
Filling or maintaining a domestic swimming or paddling pool	TUB		✓	✓	✓
Drawing water, using a hosepipe, for domestic recreational use	TUB		✓	✓	✓
Filling or maintaining a domestic pond using a hosepipe	TUB		✓	✓	✓
Filling or maintaining an ornamental fountain	TUB		✓	✓	✓
Cleaning walls, or windows, of domestic premises using a hosepipe	TUB		✓	✓	✓

Restriction activity	TUB / Drought Order	Level 1: Impending Drought	Level 2: Drought Conditions	Level 3: Severe drought conditions (Phase 1)	Level 3: Severe drought conditions (Phase 2)
■ Including small businesses using water-fed poles to clean domestic walls and windows; where the purpose of cleaning is the removal of graffiti	TUB				✓
Cleaning paths or patios using a hosepipe	TUB		✓	✓	✓
■ Including small businesses whose sole operations are the cleaning of paths and patios; where the purpose of cleaning is the removal of graffiti	TUB				✓
Cleaning other artificial outdoor surfaces using a hosepipe	TUB		✓	✓	✓
■ Including small businesses whose sole operations are the cleaning of hard standings; where the purpose of cleaning is the removal of graffiti	TUB				✓
Watering outdoor plants on commercial premises	Drought order		✓	✓	✓
■ Including watering of newly bought plants and plants watered using certain water efficient apparatus such as drip- or micro-irrigation through perforated hosepipes and sprinkler irrigation systems	Drought order		✓	✓	✓
Filling or maintaining a non-domestic swimming or paddling pool	Drought order		✓	✓	✓
Filling or maintaining a non-domestic pond	Drought order			✓	✓
Operating a mechanical vehicle-washer	Drought order		✓	✓	✓
■ Including Washers that recycle water and as a consequence use less than 23 litres of mains water per vehicle	Drought order			✓	✓
Cleaning any vehicle, boat, aircraft or railway rolling stock	Drought order			✓	✓
■ Including where the purpose of cleaning is the removal of graffiti	Drought order				✓
Cleaning non-domestic premises	Drought order			✓	✓

Restriction activity	TUB / Drought Order	Level 1: Impending Drought	Level 2: Drought Conditions	Level 3: Severe drought conditions (Phase 1)	Level 3: Severe drought conditions (Phase 2)
■ Including where the purpose of cleaning is the removal of graffiti	Drought order				✓
Cleaning a window of a non-domestic building	Drought order			✓	✓
■ Including small businesses using water-fed poles to clean non-domestic windows	Drought order				✓
Suppressing dust	Drought order			✓	✓
Operating cisterns	Drought order			✓	✓
Cleaning industrial plant	Drought order				✓

Whilst water use restrictions to reduce demand are normally expected to be in place before drought permits/orders are implemented, there may be circumstances when this would not be appropriate. For example, when applying for a drought permit/order to enhance supply availability during the winter, the imposition of demand restrictions would have a very small impact because discretionary water use is low during the winter. An example of this was when we applied for a drought permit to help refill Bewl Water reservoir in January 2018 without implementing demand restrictions.

With regard to the phasing of TUBs, it should be noted that 'the variation of a prohibition is to be treated as a prohibition' (Water Industry Act 1991, 76b (4)). Hence the procedure for providing notice would need to be followed for each variation in prohibition, with the consequent time delay that would entail. This is important to consider when determining the number of phases we might adopt.

Reducing garden watering with a hosepipe has higher benefit in demand reduction during the early months of a drought when compared with other activities such as washing cars, boats and domestic windows. It is during spring time that many plants start to grow or recover from winter, and it would be seen as unfair by many customers to restrict garden watering with a hosepipe, if other uses continue to be allowed. After careful consideration on phasing of temporary water use restrictions, we believe that introducing the majority of TUBs in a single first phase is the optimum approach. This has the benefit of providing a strong message for the need to conserve water (even where some restrictions would not necessarily be expected to provide a significant water saving in their own right) and is less confusing in terms of the restrictions that may be in place at any given time. We will, however, consider delaying certain restrictions until a later phase, primarily to avoid the potential impact these can have on some small businesses. This consideration is based on experiences and findings from the 2004-07 drought.

We will work in partnership with neighbouring water companies, Water UK, Defra, Ofwat and the EA to co-ordinate as far as possible on messages, timings of announcements, restrictions, exceptions and concessions and stakeholder engagement. For example, in the 2012 drought SWS was signed up to the National Drought Management Group and participated in weekly meetings with the Strategic Drought Communications Group and Drought Communications Practitioners Group. These groups work to co-

ordinate messages, information and updates going forward and develop group activities to keep customers better informed. However, it is also important to recognise that sometimes, depending on the nature of the drought, certain geographical areas may need to have specific messages. During an impending drought we will also initiate discussions with local authorities regarding watering regimes for public parks and gardens.

Although we would wish to have the power to implement a drought order restricting water use immediately after it is granted, we will re-assess the circumstances at the time of the drought order being granted. It may be appropriate to implement a drought order through a phased approach considering future circumstances, the requirements for the protection of public water supplies and other relevant circumstances. Depending on the speed a drought develops, we may seek to apply for a NEUB drought order whilst still under drought trigger conditions but not implement it until the severe drought trigger has been breached.

Our commitment to household customers also applies during drought events and we will work to honour the minimum standards of service that our customers can expect.

2.5.5. Wholesale contract

A market reform process has been implemented in the water sector since April 2017 which enables non-household customers to choose their retailer for water supplies.

To ensure that operational interactions between wholesalers and retailers work effectively a contract has been produced by Market Operator Services Ltd (MOSL) Wholesale-Retail Code: Wholesale Contract for Wholesale Services 2017 which describes how the wholesaler and retailer will co-ordinate operational activities that are necessary for the wholesaler's provision of water services to the retailer.

The following steps are set out in this contract and will be followed as a drought develops and we impose restrictions upon our domestic customers:

Step 1
The wholesaler and retailer may agree to follow any industry guidance or other code of practice regarding communications, including with non-household customers, in relation to drought or other dry weather conditions.

Step 2
Whether or not they are following any such guidance or code of practice, the wholesaler shall inform the retailer:

- when it considers a drought or dry weather conditions to be developing or escalating; and
- when it is giving particular consideration to any restriction on or reduction in water services.

The wholesaler shall also confirm to the retailer:

- the process by which it intends to manage the drought or dry weather conditions, including any lines of communication or planned discussions in relation to a potential restriction on or reduction in water services; and
- any reasonable message it wishes the retailer to convey to its non-household customers and the retailer shall convey such messages.

Step 3
In so far as it is possible, the wholesaler shall respond to any question the retailer reasonably asks in respect of such plan or message and the wholesaler shall consider any information or representation which the retailer makes in respect of it.

Step 4
The retailer shall follow any reasonable instructions the wholesaler gives it in relation to a drought or dry weather event e.g. by asking its non-household customers to reduce their demand for water. The wholesaler shall provide any information available to it that is reasonably requested by the retailer in relation to such instructions.

Step 5
If the wholesaler intends to issue a temporary ban on use under section 76 of the Water Industry Act 1991 which may be relevant to the retailer's non-household customers' activities, or to seek any drought permit/order, it shall consult with the retailer.

If the wholesaler does issue any such ban or obtain any such drought permit/order, it shall inform the retailer and keep it informed of any change to the terms of such ban, drought permit/order.

Step 6
If the retailer becomes aware of any of its non-household customers breaching the terms of any temporary ban or drought order, it shall inform the wholesaler within one business day.

Step 7
The wholesaler shall inform the retailer whenever it considers a drought or other dry weather event to be subsiding and when any temporary ban, drought order/permit has been lifted.

3. Supply actions

3.1. Operation of sources

Summary	Adjustment of source operations to maximise storage and reduce environmental stress		
Initiating Trigger(s)	Level 1 SPI/SPEI trigger 60-days flow trigger Environmental stress triggers	**Drought Levels**	Level 1 - 4
Expected Impact	1-3% increase in DO. Impacts greatest when initiated in the spring and summer.		
Lead Time	Can be actioned immediately but benefits may not be realised for several months.		

If a drought is threatened and develops, we will review the operation of our sources, and, where relevant, ensure that sources operate in an appropriate 'drought mode' e.g. by conserving storage in reservoirs. This would normally involve changing the balance of groundwater and surface water abstraction to protect future supplies in the event of drought conditions becoming more serious.

Typical operational responses include:

- Maximising abstraction from run-of-river sources in order to rest groundwater or reservoir sources during the early stages of drought. This maximises groundwater and reservoirs sources' availability at later stages of the drought when river flows are reduced to such a level that abstraction is constrained by flow conditions on the licence.
- Maximising pumping from groundwater sources where this will have little impact on availability later in the drought, in order to rest more vulnerable groundwater sources or surface water reservoirs that can then be used in later stages of a drought.

- Increasing inter-company transfers and inter-zonal transfers from areas that are not as significantly drought affected in order to alleviate abstraction from groundwater or reservoirs within the drought affected area(s).
- Reduce abstraction from sources which may be causing environmental stress (e.g. those closest to surface water bodies or groundwater dependent terrestrial ecosystems) and relocate it elsewhere such as from headwater catchments to downstream sources.

3.2. Inter-company bulk transfers

Summary	Optimise management of bulk transfers between water companies		
Initiating Trigger(s)	Level 1 SPI/SPEI trigger 60-days flow trigger	**Drought Levels**	Level 1 - 4
Expected Impact	It is not possible to accurately forecast the variations in volumes available for bulk transfers during any specific drought as this depends on a number of factors such as the relative status of available supplies, both at the time and in the future and demand restrictions in place for each water company		
Lead Time	Ongoing activity throughout duration of drought		

We have a number of bulk supply agreements with neighbouring water companies that cover both imports and exports. The terms and conditions of these transfers are set out in the bulk supply agreements with the companies. We are finalising updates to some of our existing bulk supply agreements, including the addition of drought management clauses where these are not already included. The expected completion dates for these are shown in Table 3.1. During a drought we will maintain close communication with our neighbouring water companies to ensure that the drought situation is understood by all parties so that if there is a need to change a bulk import or export, we can take decisions in a timely manner in accordance with the Drought Plan and, jointly with the other company.

Our WRMP19 plans for public water supply to be reliable up to and including droughts of 1-in-200 year severity. The DOs of our sources are estimated in view of a drought of this severity. The WRMP19 includes for the implementation of water-use restrictions and other drought management measures in line with our Drought Plan.

Agreements of bulk supplies from SWS to other companies are thus designed for droughts up to and including 1-in-200 year drought events and in some cases 1-in-500 year drought events. In reality, as a drought begins to develop, we do not know how severe it will become. There is a risk a drought may develop to be more severe than a 1-in-200 years event. In view of that risk, source outputs will be managed to ensure some output will remain available if a more severe drought occurs. For this reason, it may be necessary to reduce outputs in droughts less severe than a 1-in-200 year event. This reduction will be done as part of 'pain share' discussions with bulk supply recipients. 'Pain share' discussions will also cover the supplies that we receive from other companies as droughts approach the 1-in-200 years' severity.

It is not possible to accurately forecast the variations in volumes available for bulk transfers during any specific drought as this depends on a number of factors such as the relative status of available supplies, both at the time and in the future and demand restrictions in place for each water company.

Our policy is that the general principles of the provision of inter-company bulk supplies rely on mutual support and equitable 'pain share' with regards to the provision of supplies during a drought. The importance of a 'pain share' arrangement was highlighted during the 2004-07 drought when there was an obligation to maintain a bulk export at the contracted rate. The receiving company had not implemented any restrictions on water use whereas we had implemented restrictions on our customers supplied from the same

resource. We would therefore seek to implement a 'pain share' arrangement for all bulk supplies when necessary. During the onset of a drought, we would begin communications with relevant neighbouring companies. It will normally be expected that should a company need to seek restraint from its customers or to restrict the water use of its customers, to maintain the supply to SWS, then we should also seek restraint from our customers or restrict their water use.

We will continue to liaise with neighbouring companies to ensure there is mutual transparency and understanding around respective plans to seek constraint from, and place restrictions on, customers. We have been and will continue to ensure 'pain share' principles are agreed and included in all the updated and new contracts.

The hydrological trigger levels used for the management of inter-company bulk supplies will be the same as those for our own sources. This ensures that there is an equitable approach to the management of available supplies. Under drought conditions, the availability of supplies for transfer will be informed by reservoir control curves, groundwater trigger levels and, where applicable, river flow recession curves.

There are a number of stages at which decisions with regard to the provision of supplies will be reviewed and undertaken as follows:

- Under normal conditions, the volumes will remain at full rates under the terms of the bulk supply agreement.
- As drought trigger levels are approached and possibly breached, there will be discussion as to whether the full bulk supply agreement volumes can be provided. It is generally expected that the DOs as stated in the WRMP would still be available up to the drought trigger level and towards severe drought.
- As trigger levels are breached and the situation deteriorates, further discussion would take place in order to determine if a reduction in volume can be managed.

Notwithstanding the above, Table 3.1 sets out details of the arrangements with neighbouring water companies for bulk supplies and shared resources during a drought. The DOs of the bulk supplies are estimated for three scenarios:

- Peak Deployable Output (PDO): This is the DO available from a source during periods of peak demand, which typically occur in the July-August period. Peak demand is estimated as a rolling 7-day average.
- Minimum Deployable Output (MDO): This is the DO available from a source when the supplies are expected to be at their lowest point, typically at the start of the autumn period. The demand during this period is measured as a 30-day rolling average.
- Average Deployable Output (ADO): This is the DO available on average during a dry year i.e. a year with low rainfall but with no restrictions on customers' water use.

Table 3.1: Summary of bulk supply arrangements during drought events

WRZ	Name and Capacity (Ml/d) of Bulk Supply	Time constraints	Description	Pain share arrangements
Portsmouth Water (PRT)				
HSE	Import from Portsmouth Water to Hampshire PDO +15Ml/d MDO +15Ml/d ADO +15Ml/d	Planned bulk transfer from 2019 onwards Further bulk transfer (9Ml/d) from PRT to Hampshire (River Itchen) to be contracted for 2024-25.	New import from PRT into SWS HSE WRZ. Availability of this bulk supply was confirmed by PRT during discussions in AMP5 and reconfirmed during discussions in early 2019 and is available up to and including the scenarios represented in PRT's WRMP19. PRT has confirmed that its forecast surplus is sufficient to provide [the initial 15Ml/d into Hampshire] bulk supply without the need for additional resource developments and for this to be reliable up to and including droughts of 1-in-200 years severity. It is assumed that the bulk supply could be at risk in an extreme (above a 1 in 200 year) drought event, unless supported by a drought order covering SWS and PRT's Lower Itchen sources. As part of our planning assumptions we have assumed a 50% reduction in supply availability in an extreme drought event based on a best estimate of resource availability however this is not a commitment to the transfer.	The Section 20 Agreement recognises the possible need for a Lower Itchen Drought Order to maintain the bulk supply for severe and extreme drought. PRT has confirmed the supply should be available in drought events of up to and including 1-in-200 years severity. As drought develops SWS and PRT will undertake drought management by implementing their current Drought Plans. Accordingly, PRT and SWS should progressively increase monitoring and review of their water resource and supply-demand balance situations and should share situation reports regularly, monthly to weekly, depending on the drought stage. The two companies should also agree joint statements to the Press (Media) and customers. Should it become apparent that the full supply may not be available, the two companies should meet to ensure complete joint understanding of the reason(s) and the overall options for maintaining supplies. The two companies should establish and work to a management plan that makes the best overall use of resources, including their conservation, with due consideration of environmental impacts of operations and respective costs. Where this joint management approach involves one or other company incurring costs over and above that which it would incur if progressing individually, the additional cost should be reasonably shared. Such cost estimates and subsequent actual costs must be made available to the company in auditable detail in this circumstance. The options for managing demand should be considered. It will normally be expected that should PRT need to seek restraint by its customers or to restrict water use of its customers, in order to maintain the supply to SWS, then SWS should also seek restraint by its customers or restrict water use by its customers. It does not necessarily follow that should SWS already be seeking restraint by its customers or be restricting water use by its customers, PRT has to do this. However, under this circumstance, PRT should at least have a clear plan as to when it would implement those measures on its customers and should share this plan with SWS. SWS assumed a 50% reduction in supply availability in an extreme drought (1 in 500 year severity) event in its WRMP19 based on a best estimate of resource availability. This is not a commitment by Portsmouth Water to provide this volume, rather an estimate for supply-demand modelling purposes in the extreme drought condition. As a drought situation develops the companies would hold regular discussions to agree the volumes of bulk supplies and to discuss the appropriate pain share agreements.

WRZ	Name and Capacity (Ml/d) of Bulk Supply	Time constraints	Description	Pain share arrangements
SN	Import from Portsmouth Water to Water Supply Work (WSW) near Pulborough PDO +15Ml/d MDO +15Ml/d ADO +15Ml/d	Current bulk transfer	SWS would seek to maximise its import from PRT during a drought event, subject to the terms of the contract. Alternatively PRT may seek to reduce it. This reflects the different impacts that a drought of different severity or duration can have on different supply areas which have different mixes of water sources and demand pressures. As a drought situation develops the companies will hold regular discussions to agree the volumes of bulk supplies. There is uncertainty with regards to the availability of the bulk supply in an extreme (above a 1 in 200 year) drought event. As part of our planning assumptions we have assumed a 50% reduction in supply availability in an extreme drought event based on a best estimate of resource availability however this is not a commitment to the transfer.	There is no formal pain share clause in the current contract. However, upon entering a drought the companies will start a dialogue to agree the approach that would be taken and discuss relevant pain share agreements. Recent discussion with PRT has identified mutual interest in updating the contract document soon. This would be an opportunity to include standard recognition of pain share. SWS assumed a 50% reduction in supply availability in an extreme drought (1 in 500 year severity) event in its WRMP19 based on a best estimate of resource availability. This is not a commitment by Portsmouth Water to provide this volume, rather an estimate for supply-demand modelling purposes in the extreme drought condition. As a drought situation develops the companies would hold regular discussions to agree the volumes of bulk supplies and to discuss the appropriate pain share agreements.
SW	Import from Portsmouth Water via North Arundel rather than Pulborough Source PDO +0Ml/d MDO +0Ml/d ADO +0Ml/d	Current bulk transfer	There is a bulk supply agreement from PRT into the Central supply area, which can be brought into the Sussex Worthing WRZ directly at North Arundel. This is intended only for use in extreme conditions when modelling suggests that DO failures would occur in either Sussex North or Sussex Brighton, not Sussex Worthing. This capability would therefore only be required during outage events and not under normal system operation. If the transfer was used it would mean that the 15Ml/d import to Sussex North from PRT was not available. There is a net gain of 4Ml/d (transfer in 8Ml/d, losing 4Ml/d of North Arundel output). This option cannot be implemented simultaneously with the option above.	There is no formal pain share clause in the current contract. However, upon entering a drought the companies will start a dialogue to agree the approach that would be taken and discuss relevant pain share agreements. Recent discussion with PRT has identified mutual interest in updating the contract document soon. This would be an opportunity to include standard recognition of pain share. SWS assumed a 50% reduction in supply availability in an extreme drought (1 in 500 year severity) event in its WRMP19 based on a best estimate of resource availability. This is not a commitment by Portsmouth Water to provide this volume, rather an estimate for supply-demand modelling purposes in the extreme drought condition. As a drought situation develops the companies would hold regular discussions to agree the volumes of bulk supplies and to discuss the appropriate pain share agreements.
South East Water (SEW)				

WRZ	Name and Capacity (Ml/d) of Bulk Supply	Time constraints	Description	Pain share arrangements
SN	Export to South East Water from Weir Wood reservoir PDO -5.4Ml/d MDO -5.4Ml/d ADO -5.4Ml/d (4.27M/d in a 1 in 500 year drought event)	Current bulk transfer from present to 2020/21 New contract to be signed off in March 2021.	The agreed contractual volume is 5.4Ml/d for the average day and peak day condition. However, during drought periods, the volumes will be subject to change based on discussions involving 'pain share' agreements. A renewal of this agreement is currently being renegotiated between SEW and SWS and is closing in to sign off in March 2021.	We continue to progress to work towards a final agreement for the export from Weir Wood with South East Water (SEW). A revised contract agreement between both companies has been developed and is currently being formally approved at Executive level. This agreement will formalise the pain share arrangements and will be effective to 2030/31. Although we cannot guarantee the agreed normal maximum volume of the bulk supply contract before 2024 to any extent that supply depends on Weir Wood Water Supply Works, South East Water's typical requirement within the contract can be routinely supported by Southern Water from other sources. The contract terms recognise this. There is regular communication between both companies and trigger levels are in place for drought situations. As trigger levels are approached, there will be discussions as to whether the full agreement volumes can be provided. South East Water has an override trigger (as outlined in section 2 of our plan) which means that they can be agile and take proactive actions depending on what volumes can be provided.
SH	The Southern Water export to South East Water at Darwell reservoir is: PDO – 8Ml/d* / 12.0Ml/d** MDO – 8.0Ml/d ADO – 8.0Ml/d * 8Ml/d over any rolling 28 day period.	Current bulk transfer from present to 2027/28. (Draft new contract for continuation by March 2021). Supply due to be taken directly from Bewl from 2025 onwards	SEW are entitled to 12Ml/d from Darwell, but under the terms of the contract SEW is permitted to abstract up to 8Ml/d over any rolling 28 day period and up to 12Ml/d during any period as long as it does not exceed the former condition above. SEW have specified in their draft Dry Weather Plan that they are entitled to 8Ml/d and clarified the conditions in their text. Southern Water and SEW are in agreement with the contractual volumes of the transfer from Darwell. The abstraction takes place from Darwell reservoir. There is an intention to alter the Bewl-Darwell transfer to remove the risk of transfer of invasive species into Darwell but the transfer into Darwell is to be maintained until 2025 when SEW will implement an alternative solution.	In more extreme droughts we have agreed a pain-share arrangement with SEW relating to the availability of supply from Bewl to Darwell reservoirs. SEW has correctly stated that "under developing drought conditions, the supply would be progressively limited to 8/17 of flow in the [Bewl to Darwell transfer] pipeline subject to a minimum of 1Ml/day". We have made reference to this same arrangement in our Drought Plan. Both companies have also made reference to a volume of 4Ml/d which has been agreed as the maximum available supply in a 1 in 500 year drought for supply-demand modelling purposes.

WRZ	Name and Capacity (Ml/d) of Bulk Supply	Time constraints	Description	Pain share arrangements
KMW	Export to SEW at Bewl reservoir and WSW near Rochester PDO -18.8Ml/d (-18.8Ml/d in extreme drought) ADO -12.3Ml/d (-11.03Ml/d in extreme drought)	Commence a draft new contract in 2021 for finalisation ahead of 2025	Under the terms of the River Medway Scheme agreement, SEW can take their entitlement at Bewl Water and a WSW near Rochester. The maximum volume of water that SEW can take at Bewl Water is governed by the River Medway Scheme abstraction licence issued to SWS. The relevant maximum volumes are 4750Ml/a and 20Ml/d. The overall amount available to SEW from the supplies at Bewl and the WSW near Rochester is defined as 25% of the yield of the River Medway Scheme (RMS). The yield is the DO calculated for WRMP19 and subsequently shared with SEW. As a drought situation develops the companies hold regular discussions to agree any restrictions or concessions for bulk supplies. The nature of the bulk supply will depend on how both companies are affected by any given drought. Planned works to increase capacity at the WSW near Rochester in early AMP7 will provide additional peak supply to SEW which are included in the DO assessment.	Pain share agreement will be included in the new contract which will be drafted in 2021 and completed before 2025. When either or both companies experience a drought, they have agreed to discuss the operation of the transfer and relevant pain share agreements.
KME	Export to SEW at Sheldwich PDO -7.39Ml/d ADO -6.80Ml/d (5.54Ml/d PDO and 5.14M/d ADO in a 1:500 year drought)	(Draft new contract for continuation in 2021)	As part of the Sheldwich scheme, SEW can take its entitlement. There is also the provision for SEW to pump water into the Eastling main at Stockbury Valley and take water out at another location. However, the net maximum daily and annual average volumes that SEW is entitled to remain the original volumes given in the Sheldwich scheme agreement.	Pain share agreement will be included in the new contract which will be drafted for continuation in 2021. When either or both companies experience a drought, they have agreed to discuss the operation of the transfer and relevant pain share agreements.
Affinity Water (AW)				
KT	Export to AW at Deal PDO / ADO-0.07Ml/d Increase to 2.0Ml/d in 2025, then -4.0Ml/d in 2029	Current bulk supply contract	This was agreed with AW in AMP6	This was agreed with AFW in AMP6. In the event of a drought, we would discuss relevant pain share agreements.
KT	Import from AW at Napchester PDO +0.1Ml/d ADO +0.1Ml/d	N/A	There is no specific contract for this small supply which is covered under our general terms and conditions of our licence conditions	There is no specific contract for this small supply. In the event of a drought, we would discuss relevant pain share agreements.
Wessex Water (WSX)				

WRZ	Name and Capacity (Ml/d) of Bulk Supply	Time constraints	Description	Pain share arrangements
HA	Export to WW PDO -0.41Ml/d MDO -0.31Ml/d ADO -0.33Ml/d	Through the planning period	The volume of the transfer reflects the take over recent years. In the event of a drought we would discuss with WW the relative resource position in the HA WRZ and agree what action is required to mitigate the impact of the drought.	In the event of a drought, we would discuss with WSX the relative resource position in the Chute area and agree the action(s) required to mitigate the impact of the drought as well as discussing relevant pain share agreements. We send two exports to WSX on the eastern side of our boundary near Andover. Liaison with WSX has verified that in the event of a drought we would expect these supplies to be secure during a drought but we would be in regular communication with each other to discuss relative resource positions and the need for flexibility with transfers should the need arise. It may be that pressures to accommodate more constraints on our abstractions in Hampshire may increasingly restrict these transfers during droughts in the future.

3.3. Supplies to major customers

Summary	Discuss bulk supply agreements with major commercial customers		
Initiating Trigger(s)	Level 3 triggers	**Drought Levels**	Level 3
Expected Impact	Uncertain, no pain share clauses exist		
Lead Time	Minimum of 8-12 weeks from TUB		

In the event of a severe drought, we would hold discussions with major customers regarding the water resources position and their supplies (see Table 3.2). We will follow MOSL Wholesale-Retail Code: Wholesale Contract for Wholesale Services 2017 which clearly sets out the roles and responsibilities for wholesale and retail companies during a drought event. This includes implementation of water efficiency measures and the imposition of TUBs and drought orders which may affect non household customers.

Table 3.2: Summary of bulk supplies to major customers

WRZ	Name and capacity of bulk supply	Time constraints	Description	Pain share arrangements
HSE	Export to a large industrial user Max no less than 10Ml/d	N/A	We have an agreement to supply a maximum of no less than 10Ml/d of treated water from Test surface water to a large industrial user. The user's main source of supply is a transfer from SWW.	There is no pain share clause, upon entering a drought the companies would open up dialogue to agree the approach that would be taken.
SH	Export to a commercial customer from Darwell reservoir Max 0.7Ml/d	N/A	We have a commercial customer that requires significant volumes of water for its manufacturing activities in East Sussex. Due to the location of the manufacturing plant, we have agreed that the company can take water directly from a gravity-fed main out of Darwell Reservoir. A meter has been installed to measure the volume of water used to enable the company to bill them as a regular commercial customer.	There is no pain share clause, upon entering a drought the companies would open up dialogue to agree the approach that would be taken.

Farms with livestock are classified as Category 4 Sensitive Customers. They are recognised as vulnerable during times of supply interruption, but there are higher priorities such as hospitals. During mains water supply interruptions SWS will provide temporary alternative water supplies on the basis of available resource and prioritisation of the most vulnerable sections of the population. We will make every effort to provide a temporary alternative supply to avoid an impact on farm animal welfare, however in the most severe drought situations, farms may also need to make their own alternative supply arrangements to care for their livestock. Farmers should refer to the website below for further information.
https://ahdb.org.uk/water-supply-problems-a-guide-for-livestock-farms

3.4. Recommissioning of unused sources

Summary	Recommission mothballed sources		
Initiating Trigger(s)	Level 2 Primary and Supporting Triggers	**Drought Levels**	Level 2
Expected Impact	<5Ml/d of DO		
Lead Time	3-6 months		

We have a limited number of sources that, for a variety of reasons, were never commissioned, have been decommissioned or are subject to long term outages. We maintain a list of these sources and site plans. During a drought, we would consider options for recommissioning these sites, which could include the installation of temporary pumps, headworks and pipework and treatment.

3.5. Enhancing abstraction at existing sources

Summary	Enhance drought yield from existing sources by adjusting infrastructure and process		
Initiating Trigger(s)	Level 2 primary and supporting triggers	**Drought Levels**	Level 2
Expected Impact	<5Ml/d of do		
Lead Time	3-6 months, for groundwater sources. Work would need to take place during a dry winter and spring to maximise benefit in the summer and autumn.		

During a drought, we may wish to enhance abstraction at existing sources. These sources could be constrained by the treatment capacity of the works or the capacity of the distribution system. Where the constraint is the hydrological yield of the source or a physical constraint, we will consider further investment in the source to improve its yield. In other cases where the output of the source is limited by the abstraction licence, then we may seek to increase the output by applying for a drought permit/order subject to hydrological and environmental constraints (see Section 3.8 of the drought plan).

We employ industry standard methodologies which have been enhanced with the use of a stochastic rainfall generator to determine the DO of each of our sources. In most cases, the amount of water that can be abstracted is limited either by the abstraction licence or the hydrological yield of the source.

We maintain an up-to-date list of the constraints on each of our sources and can respond quickly during a drought to identify schemes where investment will improve the supply-demand balance. However, in some cases these schemes will be complex and require large-scale engineering, which cannot be completed within the normal timeframe of a drought. Examples of interventions that can be completed during a drought include but are not limited to the following:

- Physical lowering of pumps or low-level cut outs within boreholes.
- Installing variable speed drive pumps.
- Refurbishment of boreholes.
- Installation of telemetry to allow accurate remote control.
- Enhanced recovery of long term outage.

3.6. Distribution network modifications

Summary	Modification of distribution network to maximise drought yield and utilisation of available supplies.		
Initiating Trigger(s)	Level 2 primary and supporting triggers	**Drought Levels**	Level 2
Expected Impact	Limited supply benefit, but may be useful to reduce abstraction impacts on environmental receptors		
Lead Time	3-6 months if infrastructure modifications required.		

Modifications to the distribution network, including re-zoning of District Metering Areas (DMAs), can improve the flexibility of the distribution system, allowing us to rest some sources and abstract more water from others. This approach can be particularly useful in areas where there are few other intervention strategies;

however, the actual impact on resource availability over the course of a drought may be limited by available supply.

3.7. Tankering

Summary	Use of tankers to move water between WRZs or from other companies with surplus		
Initiating Trigger(s)	Level 2 Primary and Supporting triggers	**Drought Levels**	Level 2 - 4
Expected Impact	Limited supply benefits.		
Lead Time	1-2 Weeks		

The tankering of water from adjacent WRZs and from other companies into WRZs most affected by drought would be considered in a severe drought. The feasibility of this option depends on the availability of water in neighbouring WRZs, as well as practical issues such as tanker capacity and road access. Based on past drought events, there is likely to be limited resource availability across our supply area and neighbouring companies could be similarly affected and seeking to conserve their resources. We have used tankering historically to address specific localised issues and therefore this remains a measure in our Drought Plan.

3.8. Drought permits/orders (supply-side)

Summary	Use of drought permits/orders in order to increase abstraction and/or conserve water storage.		
Initiating Trigger(s)	Permit/order preparation and application at Level 1 and 2 triggers Permit implementation at Level 3 triggers	**Drought Levels**	Level 3
Expected Impact	Varies significantly by drought permit		
Lead Time	3 – 6 months from preparation to implementation		

When drought conditions lead to or threaten a serious deficiency of supplies, we may require recourse to drought permits/orders in order to increase abstraction and/or conserve water storage to help maintain essential water supplies to our customers.

For existing licensed sources, drought permits/orders are used to temporarily vary abstraction licence conditions to maintain or increase the amount of water that can be abstracted, help conserve reservoir storage or aid winter reservoir refill. The types of abstraction licence changes that may be sought under drought permits/orders comprise one or more of the following:

- Reductions in reservoir releases.
- Relaxation to MRF and HoF conditions.
- Increases in the daily, seasonal or annual abstraction volumes authorised in the licence.
- Variations to groundwater abstraction licence constraints.

Drought permits/orders can also be used to authorise the abstraction of water from a specified water source where there is no existing abstraction licence.

Application for drought permits/orders in winter may be sought in order to:

- reduce the risk of drought permits/orders in the following summer;
- assist the recovery of water supply resources which have been excessively depleted as a result of drought; and
- Maintain water supply in drought affected areas.

Drought permits/orders require applications to be made to the EA or the Secretary of State, respectively. They are granted for specified periods up to a maximum of 6 months and can be extended by up to a further 6 months (maximum limit of 1 year). Each drought permit/order will likely require environmental monitoring and appropriate measures to mitigate adverse environmental effects; further details are provided in the Environmental Monitoring Plan (EMP) (Annex 7).

Drought orders may go further than drought permits. They can deal with discharges of water, abstractions and discharges by individuals or organisations other than the water undertaker affected and can also relate to water supply and treatment obligations.

The EA has a permit/order application checklist that it released in 2021, although at the time of writing there have been no applications made that have used this checklist yet the company commits to submitting a completed version of the checklist alongside its drought permit application.

3.8.1. Our drought permit and drought order options

The drought permit/order options included in this plan are presented in Table 3.5. This includes a summary of the varied licence conditions which would be applied for, the applicable drought trigger for application and the maximum supply benefit. Detailed EARs have been updated for each specific drought permit/order in support of the Drought Plan. However, these are not provided with the Drought Plan but are available upon request. Drought Plan level HRA, SEA, and WFD assessments are also provided (see Annexes 8-10).

A summary of the environmental impact category and a confidence level for each drought permit/order option is presented in Table 3.3, taken from the information presented in the EARs for each permit/order option. The environmental impact categories are based on existing datasets and knowledge of the environmental features within the hydrological zone of influence of the permit/order. The confidence level is defined by the availability and understanding of the data within the hydrological zone of influence of the permit/order. These environmental impacts and confidence levels have been updated following a review of existing datasets and the programme of baseline monitoring undertaken since 2019, as detailed in Section 7.

The licence changes proposed under drought permits/orders involve a range of temporary licence variations depending on the nature of the source and the existing licence conditions. The changes may include:

- Relaxing the MRF or HoF constraints which prevent abstraction occurring when river flows fall below a particular level for groundwater sources (Lukely Brook, Caul Bourne).
- Relaxing MRF or HOF constraints on surface water abstractions used either for direct supply or for reservoir refill (Eastern Yar, River Test, Lower Itchen, Pulborough, Bewl, Darwell).
- Allowing for the operation of a river augmentation scheme (Candover)
- Reducing the compensation release requirement from a storage reservoir (Weir Wood).
- Increasing allowable abstraction volumes on a daily basis (North Arundel).

As described in our main drought plan, we have removed the drought permits for Faversham and Sandwich because abstraction licence variations mean these would no longer provide a benefit.

When a licence is temporarily varied under a drought permit/order, the amount of extra water made available under the revised licence conditions can depend on a number of factors, including how the drought progresses, the season and storage conditions in reservoirs and aquifers. If drought conditions worsen, then

it is possible river flows or groundwater levels may fall below the revised licence conditions, and the yield benefits of the drought permit/order may be restricted. The yield benefits of licence changes which allow increased abstraction to support storage reservoirs will depend on the levels of the reservoirs at the time of the licence changes.

Table 3.3 shows the amount of additional water we have assessed as being made available by the drought permits/orders under drought to severe drought conditions. For surface water sources, the benefits have been assessed in relation to river flows expected during a 1-in-200 year drought event and align with the values cited in our WRMP19. For the groundwater sources on the IOW and in North Kent we have developed groundwater models which will help to improve our understanding of source yields during severe droughts.

Table 3.5 includes four drought permit/order options which are required as part of implementation of the Test, Candover and Itchen Interim Abstraction Scheme set out in the Section 20 Agreement. Under this agreement, the Test surface water Drought Permit will need to be applied for in 'normal' conditions and potentially implemented in the 'drought' stage. The Lower Itchen sources Drought Order covers both the abstraction licences of our Lower Itchen sources and PRT's abstraction near the tidal limit since any change to the former will have an impact on the latter.

We regularly review the drought permits/orders and as a result have removed several that were included in our 2019 Drought Plan. These included Shalcombe, Site in the Test Valley, Stourmouth and Powdermill reservoir. We chose to remove these as they were no longer considered to be either viable or environmentally appropriate.

3.8.2. Exceptional Shortage of Rainfall (ESoR)

When preparing a case to demonstrate an Exceptional Shortage of Rain (ESoR) in support of a Drought Permit or Order application we will follow two key guidance documents:

- Appendix D - Supplementary guidance on exceptional shortage of rain (updated February 2019) of the Drought Permits and Drought Orders Supplementary guidance from the Environment Agency and Department of Environment, Food and Rural Affairs, May 2019

- Hydrological guidance for the assessment of an Exceptional Shortage of Rain (ESoR), Draft Guidance, March 2021.

Rainfall monitoring is a key component of our drought triggers and we use a suite of rainfall triggers (draft Drought Plan Annex 4) to monitor the development of drought. These rainfall triggers are based on the Environment Agency Hydrological Area Rainfall series which are derived from the Met Office HAD-UK rainfall dataset and the Environment Agency Daily Rainfall Tool (DRT). When preparing a ESoR case we will use the same catchment rainfall datasets as these can be directly related to our drought triggers and use of catchment rainfall data is consistent with the above guidance. We presently receive these data as monthly totals under licence from the Environment Agency

Table 3.3 sets out the key hydrological and rainfall series we will consider for each Drought Permit or Order application, in some cases a primary and supporting dataset are indicated. Assessment of the supporting dataset may be presented alongside the primary for these drought permits as this reflects that our Water Resource Zones and distribution of our supply network do not map evenly onto hydrological catchments. A drought permit or order could be used to support supplies outside the hydrological catchment where the drought permit or order is implemented.

Table 3.3 Relationship of our Drought Permit and Order options to EA Hydrological Catchment Rainfall Series and our rainfall triggers based on Standard Precipitation Indices (SPI) and Standard Precipitation and Evapotranspiration Indices (SPEI) to support ESoR Assessment.

Drought Permit or Order	Water Resource Zone	Primary Hydrological Area Rainfall Series	Supporting Hydrological Area Rainfall Series	SPI and SPEI Drought Triggers available
Lukely Brook, Caul Bourne, Eastern Yar	Isle of Wight	Isle of Wight	n/a	Yes
River Test	Hampshire Southampton West	River Test	Hampshire Tertiaries (for River Blackwater)	Yes for River Test, not for Hampshire Tertiaries
Candover Augmentation Scheme, River Itchen, Lower Itchen	Hampshire Southampton East	East Hampshire Chalk	Hampshire Tertiaries (for Lower Itchen)	Yes for East Hampshire Chalk, not for Hampshire Tertiaries
Pulborough	Sussex North	Western Rother Greensand	n/a	Yes
Weir Wood	Sussex North	River Medway	n/a	Yes
North Arundel	Sussex Worthing	West Sussex Chalk	n/a	Yes
East Worthing	Sussex Worthing	West Sussex Chalk	East Sussex Chalk	Yes
Bewl Water Reservoir / River Medway Scheme	Kent Medway West	River Medway	North Kent Chalk North West Grain Sheppey	Yes except for Sheppey
Darwell Reservoir	Sussex Hastings	Eastern Rother	n/a	Yes

We have removed the Faversham and Sandwich drought permits from this table for the reason described in section 3.8.1.

Monthly rainfall data will form the basis of our ESoR assessment and we will present the following in analysis support of our assessments to demonstrate an Exceptional Shortage of Rain has occurred:

- Ranked cumulative rainfall totals for the duration of the drought period which can be compared to our assessment of drought vulnerability for each Water Resource Zone (Annex 4)
- SPI and SPEI data for the drought period of interest which demonstrate an exceptional shortage of rain and where relevant can be compared to our drought triggers
- Long duration rainfall frequency analysis and assessment of event based upon an estimate of the event return period
- Assessment of long term average percentage rainfall, primarily compared against the 1961-1990 climate multiple but other periods may be considered if relevant.
- Supporting evidence of a serious deficiency of supplies linked to an exceptional shortage of rain based on River Flows, Groundwater Levels or Reservoir Storage

3.8.3. Sequencing of drought permit/order implementation

We have taken account of the findings of the environmental assessments of each drought permit/order, along with the WRZ source characteristics and discussions with the environmental regulators, to develop the prioritised sequencing of drought permit/order implementation. We plan to implement those drought

permits/orders which have been assessed as having the least environmental impact ahead of those assessed as having greater environmental impact in the applicable WRZs.

Table 3.5 indicates the sequencing of drought permit/order implementation in each WRZ. The precise phasing during a drought will take into account the prevailing environmental conditions informed by the in-drought monitoring activities set out in Annex 7.

Further information on the timing of all of our drought actions in relation to trigger levels is presented in Section two of the drought plan.