

Drought Plan - Addendum



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Drought Plan 2022 - Addendum

N.B. Please read this addendum in conjunction with the 2022 Drought Plan.

Why is this Addendum required?

Our Drought Plan 2022 was approved by Defra on the 4 August 2022, and following its approval the implementation of drought measures has been in accordance with the Drought Plan 2022.

During 2022 there was a widespread drought across the country and measures were taken to address the impact of the drought, including demand side measures such as the imposition of a Temporary Use Ban (TUB) across much of SE England. Thames Water (herein referred to as "we") implemented a TUB on 24 August 2022. We also implemented a number of our strategic drought schemes including deployment of the North London Artificial Recharge Scheme (NLARS) and the West Berkshire Groundwater Scheme (WBGWS).

Following the drought we reviewed our management of the event and worked with the wider industry including other water companies, the Environment Agency and other regulators to understand whether lessons could be learnt as a result of the drought. We have published this addendum to implement the lessons learnt. As the lessons learnt do not constitute a material change of circumstances, we have not redrafted and consulted on a revised plan, as the lessons learnt do not fundamentally change our protocols or strategies, they simply elaborate, clarify or update these protocols and strategies where necessary.

Lessons learnt include, but are not limited to, updating our drought management protocol to include more severe scenarios for drought planning, an update to our communications strategy to reflect best practice, updating our TUB implementation measures to align our exemptions as closely as possible with other water companies in accordance with the updated industry Code of Practice on water use restrictions and updating our 'More before Level 4' options following feasibility studies. We have also included an update to reflect the current position of the Thames Gateway Water Treatment works in line with our recently submitted rdWRMP24. In order to make these updates available to regulators and customers we have produced this addendum to our Drought Plan 2022. We will publish and consult on a revised drought plan as and when required by section 39B of the Water Industry Act 1991.

In summary we have made the following changes:

- We have updated our Communications Strategy (Section 7) to reflect the best practice adopted during the 2022 drought event.
- Sections detailing our More Before Level 4 (MB4) and Level 4 measures have been updated, following reviews of their feasibility in light of the latest information.
- We have updated our TUBS exemptions to align as closely as possible with other water companies.
- Output figures for Thames Gateway Water Treatments Works have also been updated to reflect the current position as set out in our rdWRMP24.
- Strategy and process changes adopted in 2022 (included but not limited to the inclusion of a 40% and 50% rainfall scenario in our forecasting) have also been recorded in this addendum.

This addendum only highlights significant changes to the plan rather than less significant changes, e.g., to document structure and wording.

Description of changes made

Section 1 Introduction and Regulatory Requirements

No changes are required to this section of the Drought Plan as a result of the 2022 drought.

Section 2 Water Supply in the Thames Catchment and Drought

No changes are required to this section of the Drought Plan as a result of the 2022 drought.

Section 3 Water Resource Strategy and Drought Management

No changes are required to this section of the Drought Plan as a result of the 2022 drought.

Section 4 Drought Management Methodology

Section 4 on the Drought Management Methodology has been reviewed and scenarios considered by the Overall Risk Indicator (ORI) will be included. Section 4.1 (p.42) will now include additional information surrounding the Overall Risk Indicator (ORI), including the adoption of 40% and 50% long-term average rainfall scenarios in addition to the original 60%, 80% and 100% scenarios (shown below), as following the 2022 drought event it was determined that the original scenarios did not highlight an imminent significant drought risk and therefore were not sufficient to allow implementation of drought measures in a drought that develops quickly.

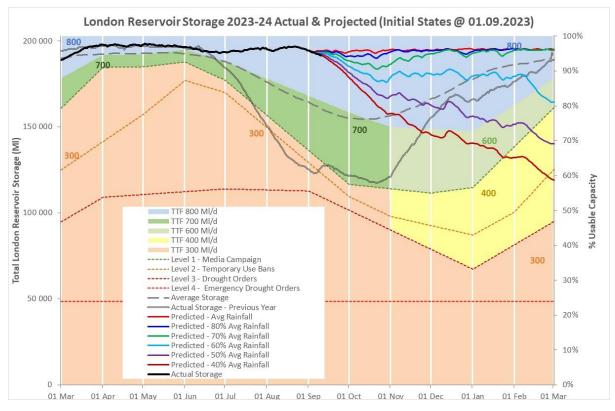


Figure 1: example ORI graph showing 40% and 50% scenarios

After the 2022 drought the timing of the implementation of drought measures was assessed and the drought measures indicative timescale in Tables 10 (London, p.50) and 11 (SWOX, p.52) of the Drought Plan 2022 are updated as detailed below.

Table 10: Drought measures indicative timescale for London

Measure	Time to Implement (Weeks)			
Media campaign	2			
Temporary Use Ban		3		
NEUB /drought permit			≤12	
Emergency drought order (EDO)				≤16
Elapsed time (WEEKS)	2	5	≤17	≤33

Table 11: Drought measures indicative timescale for SWOX

Measure	Triggers	Minim impler	um nent (W	time ′eeks)	to
Media campaign	DEL1 or higher	2			
Temporary Use Ban	DEL2 or higher		3		
NEUB /drought permit	Application to Defra/EA—200 MI/d rule			≤12	
Emergency drought order	Application to Defra- implementation of DD11				≤16
Cumulative Elapsed time		2	5	≤17	≤33

Section 4.3 'Post Drought Review' (p.61) will now include the following text: 'As part of the lessons learnt from the 2022 drought, there will also now be an annual drought education training presentation to improve the preparedness for drought of all relevant internal stakeholders. As part of the post-drought review, this training module should be updated with any changes to the drought plan and information on the most recent drought.'

Section 5 Demand-side measures

Section 5.4.1.1 'Implementation Policy: Formal notice' (p.72) currently states that we have a 3week period to 'impose' TUB restrictions, but it was not clear whether this was a 3-week notice period to inform customers, or an internal timeframe around preparing and publishing the TUB. This will be updated to provide clarity, to say that "we have selected a 3-week period for preparing and publishing TUB restrictions". Figure 2 below will be included in this section to show a more up-to-date notice sent to customers when the TUB was implemented in 2022 (below); in the 2022 Drought Plan this is a notice from 2012 (p.72).



Figure 2: The notice sent to customers in 2022 when the TUB was implemented

Thames Water worked alongside United Kingdom Water Industry Research (UKWIR) and Ricardo PLC, and with Water Resources South East (WRSE), to update the industry Code of Practice on water use restrictions to align our exemptions for TUBs. Table 15 of the Drought Plan 2022 (p.74) will now include the updated TUBs exemptions table, splitting TUB categories out into sub-categories to allow more detail and clarity on both the common and the bespoke exceptions. Additionally, 'discretionary universal' exceptions have become 'non-statutory common' exceptions, and 'suggested discretionary concessional' exceptions have become 'non-statutory bespoke' exceptions.

TUB	Statutory	Sub-Category	Non-Statutory	Non-Statutory Bespoke Exception
Categ	exception	0,	Common Exception	(granted by individual water
ory			(granted by all water	companies)
1. Waterin g a garden using a hosepip e	Using a hosepipe to water a garden for health or safety reasons. NB 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	Vulnerable customers	Companies) Customers on the Priority Services Register who are physically unable or who cannot make adjustments (due to health reasons) to use a watering can/bucket safely.	None
	ground.	Watering of new turf	Where this cannot be reasonably done by watering can, where the domestic turf was laid before the onset of TUBs, and for a period of four weeks which start from the date when the turf was laid, not the start of the TUB.	A drip or trickle irrigation watering system can be used if: - they are fitted with a pressure reducing valve and a timer - that are not handheld - that place water drip by drip directly onto the soil surface or beneath the soil surface without any surface runoff or dispersion of water through the air.
		Watering of new trees, saplings, whips, hedging in domestic gardens	Where trees, whips, saplings and hedging have been planted within a three-year window of the imposition of the TUB (ie within the last three years of the start of a TUB)	
		Urban trees	Where standard trees (with a branchless stem of at least 1.8m high) are planted in urban settings, such as streets in the last three years	None
2 Cleanin g a private motor- vehicle using a hosepip e	Vehicles defined as a "private motor-vehicle", excluding: (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	Vulnerable customers	Customers on the Priority Services Register who are physically unable or who cannot make adjustments (due to health reasons) to use a watering can/bucket safely.	None

Table 15: Updated TUB exemptions table

TUB Categ ory	Statutory exception	Sub-Category	Non-Statutory Common Exception (granted by all water	Non-Statutory Bespoke Exception (granted by individual water companies)
	section 192 of the Road Traffic Act 1988 (d)		companies)	
		Car washing businesses/ commercial car washes	None A business can use a hosepipe to clean private motor vehicles where this is done as a service to customers, where this cannot be reasonably done using a bucket.	None
3. Waterin g plants on domesti c or other non- comme rcial	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.	Vulnerable customers	Customers on the Priority Services Register who are physically unable or who cannot make adjustments (due to health reasons) to use a watering can/bucket safely.	None
premise s using a hosepip e		Food crops & allotments Watering of new turf	Watering food crops at domestic premises or private allotments, where this cannot be reasonably done by watering can. Where this cannot be reasonably done by watering can, where the domestic turf was laid before the onset of TUBs, and for a period of four weeks which start from the date when the turf was laid	A drip or trickle irrigation watering system can be used if: - they are fitted with a pressure reducing valve and a timer - that are not handheld - that place water drip by drip directly onto the soil surface or beneath the soil surface without any surface runoff or dispersion of water through the air.
		Watering of woodland, trees, saplings, whips, hedging	Where trees, whips, saplings and hedging have been planted within a three-year window of the imposition of the TUB (ie within the last three years of the start of a TUB). This covers tree planting by a council and/or charitable/voluntary organisation and/or under a subsidy scheme and covers larger-scale tree planting not individual trees.	
4. Cleanin g a private leisure boat using a hosepip e	(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	Vulnerable customers	Customers on the Priority Services Register who are physically unable or who cannot make adjustments (due to health reasons) to use a watering can/bucket safely.	None

TUB Categ ory	Statutory exception	Sub-Category		Exception by all water	Non-Statutory (granted by companies)	Bespoke individual	Exception water
	health or safety reasons.						
		Boats	for: commercial clean vesse primary resid to clean 1 fouling i increased consumptior on engine: designed to with a hosep to prevent of spread of and/or invas	Is that are a dence boats where s causing fuel n. s that are be cleaned ipe. or control the non-native ive species	None		
5. Filling or maintai ning a domesti c swimmi ng or paddlin g pool	is designed, constructed or adapted for use in the course of a programme of medical treatment; (4) filling or		Vulnerable customers	Customers on the Priority Services Register who are physically unable or who cannot make adjustment s (due to health reasons) to use a watering can/bucket safely.	None		
		Domestic swimming pool, paddling pool, swim spa, exercise spa	pool, paddlir spa or exerc a fixed st empty after or refurbishmer been refille hosepipe ca for any subs In this cas refurbishmer	a swimming ng pool, swim ise spa that is ructure from construction significant nt. Once it has ed then a nnot be used equent filling. se significant nt should be equivalent to	None		
	Pool with religious significance		A hosepipe can be used for pools within places of worship or community pools when they are used as part of a religious ceremony.		None		
6. Drawin g water, using a hosepip	None		Vulnerable customers	Customers on the Priority Services Register who are	None		

TUB Categ ory	Statutory exception	Sub-Category	Non-Statutory Common Exception (granted by all water companies)	Non-Statutory (granted by companies)	Bespoke individual	Exception water
e, for domesti c recreati onal use			physically unable or who cannot make adjustment s (due to health reasons) to use a watering can/bucket safely.			
		Hot tubs	When filling a hot tub that is a fixed structure from empty after construction or significant refurbishment. Once it has been refilled then a hosepipe cannot be used for any subsequent filling. In this case significant refurbishment should be treated as equivalent to construction.	None		
		Caravan or motorhome	Filling a water tank in a caravan or motorhome where the water is to be used for washing, cooking or sanitation purposes.	None		
7. Filling or maintai ning a domesti c pond using a hosepip e	Filling or maintaining a domestic pond in which fish or other aquatic animals are being reared or kept in captivity.	Vulnerable customers	Customers on the Priority Services Register who are physically unable or who cannot make adjustments (due to health reasons) to use a watering can/bucket safely.	None		
8. Filling or maintai ning an orname ntal 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.	Vulnerable customers	Customers on the Priority Services Register who are physically unable or who cannot make adjustments (due to health reasons) to use a watering can/bucket safely.	None		
9. Cleanin g walls, or window s, of	Using a hosepipe to clean the walls or windows of domestic premises for health or safety reasons.	Vulnerable customers	Customers on the Priority Services Register who are physically unable or who cannot make adjustments (due to health reasons) to use a watering can/bucket safely.	None		
domesti c premise s using		Non-mains connection	Where cleaning apparatus is not connected to mains supply. Electric pumps that are connected to water butts filled by	None		

TUB Categ ory	Statutory exception	Sub-Category	Non-Statutory Common Exception (granted by all watt companies)	
a hosepip			rainwater are not cover by the restrictions.	ed
е		Graffiti	None	Removing graffiti from domestic premises when the graffiti is a hate crime, insulting or offensive.
		Cleaning by a business or commercial enterprise	Cleaning the walls a windows of domes premises where this done by a business as service to customers. I For clarity: the use water-fed poles commercial cleaners window cleaning at heig is permitted under the H&S Statutory Exception The domestic use of water-fed pole is m permitted under TUB.	tic is a VB of by for yht he on. a
10. Cleanin g paths or patios using a hosepip e	Cleanin patios for health or safety reasons. g paths or patios using a hosepip		Vulnerable customers used customer on Priority Services Register	be by s he or or not t to to a
			Where cleaning apparatis not connected to ma supply. Electric purt that are connected	ns ps to by
		Graffiti	None	Removing graffiti from domestic premises when the graffiti is a hate crime, insulting or offensive.
		Invasive species		he None or of ve not ng
		Cleaning by a business or commercial enterprise	other preferred means. Where used to clean the paths or patios domestic premises where this is done by a busine as a service to custome	of pre ss rs.
			The use of water-fed po for cleaning at height permitted under the H Statutory Exception. T domestic use of a wat	is &S he

TUB Categ ory	Statutory exception	Sub-Category	Non-Statutory Common Exc (granted by all companies)	water	Non-Statutory (granted by companies)	Bespoke individual	Exception water
			fed pole is not pe under TUB.	ermitted			
11. Cleanin g other artificial surface s using a hosepip e	Using a hosepipe to clean an artificial outdoor surface for health or safety reasons.		Vulnerable A h customers may used cust on Prior Serv Regi who phys unat who mak adju s (heal reas use wate can/ safe	d by omers the ity ices ster are sically ole or cannot e stment due to th ons) to a ering bucket y.	None		
		Non-mains connection	Where cleaning ap is not connected t supply. Electric that are connect water butts fill rainwater are not of by the restrictions.	o mains pumps sted to ed by	None		
		Graffiti	None		Removing graffiti fro the graffiti is a hate	om domestic p crime, insulting	remises when or offensive.
		Invasive species	Where used as part of the process of preventing or controlling the spread of non-native and/or invasive species, where cannot reasonably be done using other preferred means. Where used to clean artificial outdoor surfaces of domestic premises where this is done by a business as a service to customers.		None		
		Cleaning by a business or a commercial enterprise			None		
			NB For clarity: the water-fed pole: cleaning at he permitted under tl Statutory Exception domestic use of a fed pole is not per under TUB	s for ight is ne H&S on. The i water-			

Similarly, Table 16 of the Drought Plan 2022 (p.78) will now include the updated NEUBs exemptions table. As well as updates to the NEUB exemptions, this table splits NEUB categories out into sub-categories to allow more detail and clarity on both the common and the bespoke exceptions. 'Universal' exemptions has become 'non-statutory common' exemptions, and 'discretionary' exemptions 'non-statutory bespoke' exemptions.

Table 16: Updated NEUB exemptions table

	Drought Order Category	Statutory Exemptions	Non-Statutory Common Exceptions	Non-Statutory Bespoke Exception
1	Watering outdoor plants on commercial premises	 The purpose specified does not include watering plants that are: a) grown or kept for sale or commercial use; or b) part of a National Plant Collection or temporary garden or flower display 	A hosepipe may be used by customers on the Priority Services Register who are physically unable or who cannot make adjustments (due to health reasons) to use a watering can/bucket safely.	None
		 The purpose does not include: a) filling or maintaining a pool that is open to the public; b) filling or maintaining a pool where necessary in the course of its construction; 		Swimming pools serving industrial training if considered justified
		 c) filling or maintaining a pool using a hand-held container which is filled with water drawn directly from a tap; d) filling or maintaining a pool that is designed, constructed 		Pools with religious significance
	Filling or	or adapted for use in the course of a programme of medical treatment;e) filling or maintaining a pool that is used the purpose of	A hosepipe may be used by customers on the Priority Services Register who are physically unable or who cannot make adjustments (due to health reasons) to use a watering can/bucket safely.	Pools fitted with approved water conservation or recycling systems
n 2 n s	maintaining a non-domestic swimming or paddling pool	 decontaminating animals from infections or disease; f) filling or maintaining a pool that is used in the course of a programme of veterinary treatment; g) filling or maintaining a pool in which fish or other aquatic animals are being reared or kept in captivity; h) filling or maintaining a pool that is for use by pupils of a school for school swimming lessons. For the purposes of paragraph 3(2)(a), a pool is not open to the public if it may only be used by paying members of an affiliated club or organisation 		Pools that are subject to significant repair and renovation, defined as: "Pool renovations are classified as alterations that require substantial changes to the shape of a pool or major additions to the structure around the pool. These are treated as new pools. Activities such as retiling or resurfacing existing pools are not classed as renovations".
3	Filling or maintaining a pond	 The purpose does not include: a) filling or maintaining a pond in which fish or other aquatic animals are being reared or kept in captivity. b) filing or maintaining a pond using a hand-held container which is filled with water drawn directly from a tap. The purpose specified in sub- paragraph (1)(b) does not include filling or maintaining a domestic pond using a 	None	None

	Drought Order Category	Statutory Exemptions	Non-Statutory Common Exceptions	Non-Statutory Bespoke Exception
		hosepipe.		
4	Operating a mechanical vehicle washer	None	A hosepipe may be used by customers on the Priority Services Register who are physically unable or who cannot make adjustments (due to health reasons) to use a watering can/bucket safely.	On grounds of biosecurity to prevent disease causing agents entering or leaving any place where they can pose a risk.
5	Cleaning any vehicle, boat, aircraft or railway rolling stock	Cleaning any vehicle, boat, aircraft or railway rolling stock for health and safety reasons	A hosepipe may be used by customers on the Priority Services Register who are physically unable or who cannot make adjustments (due to health reasons) to use a watering can/bucket safely.	Small commercial operators whose business partially or wholly depends on work involving the washing of private recreational craft or valeting using hosepipes Those using vessels as a primary residence, which should be subject to the same constraints as any other domestic customer when restrictions are imposed Cases in which the fouling of hulls is causing increased fuel consumption by the drag created A hosepipe can be used as part of the process of removing graffiti from domestic premises when the graffiti is a hate crime, insulting or offensive
				To prevent or control the spread of non-native and/or invasive species.
6	Cleaning any exterior part of a non-domestic building or non-	Cleaning any exterior part of a non- domestic building or a non- domestic wall for health and safety	A hosepipe may be used by customers on the Priority Services Register who are physically unable or who	Small businesses whose sole operations are cleaning of non-domestic buildings using hosepipes
	domestic wall	reasons	cannot make adjustments	Low water use technologies

	Drought Order Category	Statutory Exemptions	Non-Statutory Common Exceptions	Non-Statutory Bespoke Exception
			(due to health reasons) to use a watering can/bucket safely.	A hosepipe can be used as part of the process of removing graffiti from domestic premises when the graffiti is a hate crime, insulting or offensive
7	Cleaning a window of non- domestic building	Cleaning a window of non- domestic building using a hosepipe for health and safety reasons	A hosepipe may be used by customers on the Priority Services Register who are physically unable or who cannot make adjustments (due to health reasons) to use a watering can/bucket safely.	Businesses involved in cleaning windows in non- domestic premises using water-fed poles or similar. An alternative (non-potable) water source
8	Cleaning industrial plant	Cleaning industrial plant using a hosepipe for health and safety reasons	A hosepipe may be used by customers on the Priority Services Register who are physically unable or who cannot make adjustments (due to health reasons) to use a watering can/bucket safely.	A hosepipe can be used as part of the process of removing graffiti from domestic premises when the graffiti is a hate crime, insulting or offensive
9	Suppressing dust	Suppressing dust using a hosepipe for health and safety reasons	A hosepipe may be used by customers on the Priority Services Register who are physically unable or who cannot make adjustments (due to health reasons) to use a watering can/bucket safely.	None
10	Operating cisterns on unoccupied buildings	None	A hosepipe may be used by customers on the Priority Services Register who are physically unable or who cannot make adjustments (due to health reasons) to use a watering can/bucket safely.	None

Section 6 Supply-side measures

Following the 2022 drought, the Drought Permit Environmental Assessments Reports (EARs) and associated methodologies were reviewed in order to implement learnings from the drought permit applications we made in 2022 in our SWOX Water Resources Zone. Section 6.1.4 of section 6 of the Drought Plan 2022 (p.88) gives an overview of the Sunridge review programme; this addendum updates section 6.1.4 to include the sentence 'The Sundridge review was completed in November 2022 and submitted to the Environment Agency.' Additionally, the following paragraph has been added at the end of the section on drought permits and orders: 'following the 2022 drought we have reviewed the Drought Permit Environmental Assessment Reports (EARs) to implement learning from applications for drought permits in our SWOX WRZ. The principal improvement to be implemented is to have application ready EARs for both a summer drought permit (for example starting in April) and a winter drought permit (for example starting in September).'

Section 6.1.7 (p.95) details MB4 options, which have been assessed in more detail in the separate MB4 report. A number of options originally in the Drought Plan were determined not to be feasible in the MB4 report and have therefore been removed from this section. The sections that have been removed are: tankering, emergency raw water pipeline transfers, and temporary desalination plants. Back-pumping and restoration of other mothballed sites (Shortlands WTW and Streatham WTW) have been added to this section, as deemed feasible by the MB4 report. Further detail has been added to the MB4 option of back-pumping over Lower Thames weirs, including the addition of Chertsey and Shepperton weirs as options, and back-pumping over weirs downstream of Farmoor, and from the River Kennet into the Kennet and Avon canal. Finally, Deephams effluent reuse scheme has been added as a supply-side option.

The amended text in the MB4 section will now read as follows:

More before Level 4 or in extremis options would be considered in situations more severe than Level 3 of Thames Water's Levels of Service hierarchy. These include:

- Reduction in bulk supplies
- Alternative sources for non-potable use
- Restoration of mothballed sites
- Back-pumping over Weirs or other structures:
 - Lower Thames weirs (Chertsey, Shepperton, Molesey and Teddington)
 - Over pumping at Fobney from the River Kennet to the Kennet and Avon canal
 - Weirs downstream of Farmoor
- Deephams reuse (not yet feasible)

We have undertaken further assessment of these options and developed high-level delivery plans in the event of a severe drought in which these options were required to be implemented. The feasibility of a range of options were assessed, with the resulting options discussed in Section 6.1.7 of the drought plan.

The plans developed, following feasibility assessments, are an initial attempt to foresee how the options would be 'activated', should they be required in accordance with drought protocol. The plans provide high-level lead times and costs where applicable and detail the practical considerations when delivering the more before level 4 options. This should allow Thames Water to initiate the options at an appropriate time, however it must be noted that the options, and their

respective delivery requirements, are subject to change as they become more developed, and uncertainty is reduced.

Further reduction of Bulk Supplies

This addendum updates the section outlining 'further reduction of bulk supplies' within section 6.1.7 (p.95). This now reads as follows:

The potential for reduction in provision of bulk supplies, beyond what is already agreed with neighbouring companies, would be explored under severe drought conditions and if a Drought Order application is made. The reduction in bulk exports to neighbouring water companies may require amendments to contractual agreements prior to a drought event requiring More before level 4 options (Drought Event Level (DEL) 3/4), and subject to applying for a Drought Order. This option would be considered with caution and under severe water resources situations, with proactive communication and involvement from affected companies. This is to create/allow for a mechanism in which exports can be reduced without threatening the collaborative relationship or risking litigation between Thames Water and neighbouring companies.

The following additional wording will be included in section 6.1.7 under the sub-heading 'further reduction of bulk supplies': In the case of Affinity Water in a very severe drought if we were potentially approaching Level 4 (i.e. we had applied for Level 4 emergency drought order restrictions) we would expect to suspend our bulk supplies to as outlined in the case of each of the bulk supplies at Fortis Green and Iver, and Perivale and Cockfosters when they are agreed.

Re-commissioning of Mothballed WTW Sites

The following additional wording will be included in section 6.1.7:

The More Before Four programme includes the restoration of mothballed water treatment works. The proposed projects have been reviewed regarding feasibility and progressed accordingly. The projects progressed include the re-commissioning of Shortlands WTW and Streatham WTW. The boreholes at Shortlands WTW are currently out of supply due to noise complaints, as the boreholes are located underneath a residential building. This scheme will upgrade the WTW to provide 5.8 MI/d of PRO into the network. Streatham WTW experiences turbidity failures when abstracting more than 6MI/d.

Back-pumping over Lower Thames Weirs

The following paragraphs replace the current section within section 6.1.7. on back-pumping over the Lower Thames Weirs (p.97), expanding on different options.

As mentioned in Section 6.1.7 a drought permit option for the Lower Thames may include an allowance for the back-pumping of water over Chertsey, Shepperton, Molesey and Teddington weirs to ensure that the water available in the Lower Thames can be taken at the existing intakes.

The proposed back pumping schemes focus on areas where river abstraction is inhibited by low flow and water level during drought conditions. Back pumping is the process of pumping water over a weir to increase the water levels in the reach upstream of the weir to ensure that the water available in the Lower Thames can be taken at the existing intakes. To allow for the back pumping in the Lower Thames, drought permits would be required. Temporary pumps would need to be installed to facilitate the works. This option will require simultaneous back-pumping at the weirs to ensure they are working in tandem to effectively pump water from each reach of river to above Chertsey weir to be abstracted at Littleton. Staines and/or Datchet depending on how far upstream pumping is extended beyond Chertsey.

The minimum lead time for implementation of this option is approximately 16 weeks. The trigger for working on this option would be Level 1 on the Lower Thames Control Diagram (LTCD) depending on the potential severity of the drought with the risk indicator showing a potentially very severe drought with risk of DEL3/4 when analysed in the preceding winter.

The following additional wording will be included in section 6.1.7:

Back-pumping over Weirs downstream of Farmoor

The back-pumping project at Farmoor has been extensively discussed as an option to provide greater abstraction potential at Farmoor during very low levels in the river Thames. The project involves the back pumping of river water over Kings weir and possibly also Pinkhill and Osney weirs, to enable sufficient flow for abstraction at the existing Farmoor water intake whilst maintaining flows down the Seacourt Stream.

Back-pumping from the River Kennet into the Kennet & Avon canal

To maintain the necessary level of abstraction at Fobney intake and to maintain flow through the fish pass at Labyrinth Weir during drought conditions, the over-pumping of water from the River Kennet into the Kennet & Avon canal could be required.

The project involves similar back pumping technology as at Farmoor and the Lower Thames Weirs, but on a smaller scale. The project involves the minor construction of a pumping facility within the existing site boundary and pipework to the river Kennet. The lead time is 16 weeks for construction of the infrastructure. The lead time for permissions, either a Drought Permit or a transfer licence would be approximately 16 weeks.

Deephams Reuse

The following wording will be included within this section, in addition to the existing paragraph in the 2022 drought plan (p.97).

Deephams re-use was explored and partially developed with assistance from Mott MacDonald in 2022/2023; however, there are many barriers and limiting factors, namely a prohibitive risk of breaching nitrate levels for drinking water supply. However, work continues to find options to deliver this solution in the future due to the potential significant benefits that would be gained from the added supply capacity. Therefore, Deephams is considered a More before level 4 option for the future but is not considered feasible in the short-term.

In section 6.1.8 'strategic schemes', Table 19 (p.98), outlines the benefit (MI/d) provided by strategic schemes. The benefit provided by Thames Gateway Water Treatment Works (TGWTW) has been updated since the last iteration of the Drought Plan. The current investment programme included in our business planning is aimed at achieving the targets included in our planning, achieving 50MI/d up to 2030 and 75MI/d from there onwards. Section 6.1.8.3 (p.99) will include additional text to outline why the TGWTW output volume has changed and also to detail a summary of factors required for continued operation of the plant. This additional text is as follows:

- We undertook a review of the TGWTW in 2017/18 and identified that the works needed a substantial mid-life upgrade, and so a programme of work was implemented, commencing in AMP7 and to continue through to AMP8. This will undertake significant remedial upgrade works to the plant to run at 100 Ml/d. During 2022 we reviewed and revised the deployable output of the plant. It became apparent that the plant itself would not be able to achieve a deployable output of 100 Ml/d. Meetings were held with the EA, Defra and Ofwat to review this decision to reduce the deployable output to 50 Ml/d in our water resources modelling. This has also been taken into account in our WRMP24 planning and confirms that we remain in water surplus during a drought in our London water resources zone. Further funding has been included in our PR24 business plan to improve the capability and resilience of the plant to provide a deployable output of 75 Ml/d by 2030.
- We can confirm that TGWTW is planned to have the capability to achieve a deployable output of 50 MI/d during AMP8, and 75 MI/d from 2030 onwards. The plant will be available throughout the year but operated normally in standby mode. The only exception to this will be during periods of intrusive and essential capital investment. The plant is run annually for a period at lower volumes of at least 25MI/d, as per the licence agreement, to maintain operating capability. Once operational we will review with our Executive Team the water resources situation and if necessary, the plant will remain in supply. The designed intermittent use of the plant means we need to replace perishable equipment once used, such as costly membranes. To manage these replacement costs, and also high operating costs, we will only utilise the full capacity of the plant when required. To replace perishable equipment the plant is required to be taken offline to allow maintenance and enable these works to be carried out. Under these circumstances the plant will take up to 90 days to bring back online. At other times the recommissioning period of 50 days will still apply.
- Continued operation of the plant is entirely dependent on the below list of factors (not exhaustive):
 - Securing an ongoing and secure supply of the carbon dioxide that is essential to its operation. During 2022/23 securing of carbon dioxide proved to be a challenge across the whole water sector and required support to ensure supplies were made available and was reviewed at a national level with the engagement of Defra.
 - Securing Regulation 31 certification on the Reverse Osmosis (RO) membranes (without which limits the plant to an average deployable output of 25 Ml/d). The sole laboratory used by the Drinking Water Inspectorate (DWI) for Regulation 31 testing is moving premises, which will delay their previously advised June 2023 Regulation 31 approval date for the new RO membranes. These timelines indicate that the site could be limited to a maximum output of 50 Ml/d until after summer 2024. Discussions with DWI, the lab and the membrane supplier are ongoing; our suppliers are awaiting DWI approval of their membranes after submitting an application last year.
 - Successful completion of AMP7 work, including improved RO racks leak collection and drainage, improved undercroft drainage and floor surface upgrades, and design and procurement activities for chemical improvement works.
 - > Asset resilience through regular maintenance activities.
 - > Trained and available staff to operate the plant.

We will continue to work on the plant to rectify internal factors impacting the plant's operation and will communicate to our regulators those external factors outside of our control, to resolve them as quickly as possible.

*Regulation 31

This Regulation sets out how approvals can be given to such construction products and materials that do not prejudice water quality and consumer safety.

Table 19: Updated table showing benefits provided (MI/d) by strategic drought schemes

Scheme	Benefit MI/d
North London Artificial Recharge Scheme (NLARS)	220 to 156
Hoddesdon Transfer scheme	0 MI/d (Scheme under review)
Thames Gateway Water Treatment Works (TGWTW)	Achieving 50MI/d up to 2030 and 75MI/d from 2030 onwards
West Berkshire Groundwater Scheme (WBGWS)	126 to 67
Small scale groundwater schemes	
ELRED, Stratford Box and Old Ford	26.7
Chingford Artificial Recharge Scheme (CHARS)	15.1 to 10.6

Section 7 Communications Strategy

Since the 2022 drought our communications strategy has been reviewed and significant updates made. The following wording has been added to the existing text within section 7.2 (p.114):

To make our communications as effective as possible, our messages need to be communicated to the relevant audiences. Our target audiences our communications plan should consider are:

- Domestic customers
- Business customers (e.g., golf courses or swimming pools)
- Retailers and Insets
- Government
- Media
- Local authorities
- Groups particularly affected by restrictions, (e.g., allotment owners, turf growers)
- Environmental NGOs
- Internally
- School pupils (through our 'always-on' water efficiency education programme)

The figure below, and the text that follows, have been produced since the drought of 2022 to show a visualisation of our communication strategy during a drought This will be included in the next iteration of the Drought Plan (2027).

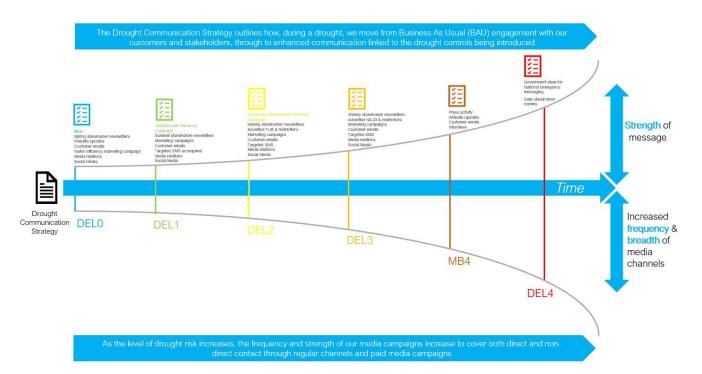


Figure 3: Updated diagram showing a visualisation of our communications strategy during a drought

This addendum updates section 7.3 of the 2022 Drought Plan with the additional wording as follows:

The customer communications at DEL0 represent our 'always on' communications campaign, our baseline of water efficiency messaging. These communications take place year-round, regardless of our drought risk. [Figure 3] shows that as our risk of drought increases, so does the strength of our messaging, and the frequency of messaging and breadth of communication channels. However, it also allows for our communication strategy to remain agile, so that our messaging can be best tailored to the specifics of the drought situation at the time.

As our risk of drought increases into DEL1, this will trigger our media/water efficiency campaign. This could involve adverts on TV and radio, messages in the media, posts on social media, and direct communications with domestic and commercial customers via email, leaflets, and SMS messages. For our stakeholders, DEL1 will trigger a series of regular stakeholder newsletters. As drought risk develops to DEL2, our enhanced media/water efficiency campaign will be triggered. This will involve very similar messaging to the campaign in DEL1, but with an increase in the frequency and strength of our message. Additional communication channels may also be considered, such as TV and radio interviews and additional messaging on social media, to increase the breadth and reach of our messages.

Moving through Drought Event Levels not only triggers various water efficiency messages, but other drought measures such as restrictions, and the introduction of our strategic sources. These activities will have associated communication requirements (e.g., sufficiently advertising the introduction of a Temporary Use Ban prior to implementation).

Timely and clear messages are vital for successful communication, as earlier messaging can lead to a greater overall reduction in customer demand for water. The messages must be consistent

across platforms, appropriate, and effective, reflecting accurately the escalation or de-escalation of the drought and its impacts. Drought messages will cover three main dimensions:

- Evidence-based information about the water resource situation (rainfall, reservoir levels) and the probability of further restrictions if necessary
- Proactive information about what customers and the public can do to reduce water usage and mitigate the impacts of the drought (dealing with restrictions, water usage efficiency measures)
- Full information about Thames Water's contribution to reduce the impacts of the drought (leakage reductions, information around how we're helping etc)

Language will also be carefully considered when constructing our messages, to ensure that customers and stakeholders can best understand the water resources situation, and consider using alternative phrases to 'drought', such as 'water availability' where it makes more sense to do so. Using more visual messaging is another way to help ensure our message is understood by our customers and stakeholders. This was a learning from external lessons learnt sessions and evidenced by the strength of our infographics which were posted on our social media pages in 2022.

Our communications to customers and stakeholders are delivered through the Public Information Officer (PIO) Tower. The PIO lead sits within the Drought Incident Structure and reporting to the PIO lead is a series of Tower leads, representing the different media teams. We will follow best practice from WRSE, aligning and coordinating our communications with the other water companies in the South-East where possible.

As well as the addition of the text above, the stakeholder section (section 7.4, p.115) has been amended, with text on key stakeholders (detailed in sections 7.5, 7.5.1, 7.5.2 and 7.5.3) removed. The 'Joint Statement with South-East Water Companies' has been moved from section 7 to Appendix Q, which is available on the website alongside the Drought Plan.

Within section 7.5, wording has been added to outline communications with Retailers and New Appointments and Variations (NAVs). This is as follows:

Retailers

During 2022 in relation to drought we engaged with retailers through our Wholesale Services Contracts & Engagement Team. Key messaging provided to retailers remained consistent with that of other key external stakeholders. Our team use various methods to communicate all related incident messaging, and this included:

- Regular update meetings either via Teams or face to face with the individual retailers as part of our regular communications
- Sharing our Key Stakeholder newsletters
- Providing drought status updates through the Retailer Wholesaler Group (RWG) Drought Working Group call. This was held during the drought peak on a fortnightly basis via Teams with interested parties.
- Sharing with retailers' details of our non-household (NHH) direct mailing initiative and our household (HH) communications flyer
- Providing retailers with links to our relevant Thames Water website pages
- Updating MOSL as a central Portal for the latest status of our Drought Incident position during the event.

During 2023 we remain actively communicating with retailers about our current water resource situation and responding to any specific requests from retailers through our Contracts &

Engagement Team. We are continuing to attend the RWG Drought Working call and providing updates of our current resourcing situation.

In the future we would adopt a similar approach as 2022 as necessary. Feedback has suggested that retailers were happy with the level and content of communication. However, consideration will be given to ensuring consistency between wholesaler messaging to assist retailers when communicating with end NHH Customers if appropriate. We will also coordinate any NHH messaging alongside HH Messaging to ensure that messaging remains consistent and effective. We would not be likely to consider a direct mailing exercise as we cannot gauge effectiveness and it is not necessarily an efficient use of resource. We would coordinate with a Household flyer campaign if this were to be considered.

New Appointments and Variations (NAVs)

New appointments and variations (NAVs) are limited companies which provide a water and/or sewerage service to customers in an area which was previously provided by the incumbent monopoly provider (i.e. Thames Water).

As soon as we become aware of supply and demand issues developing we will inform the NAVs that we supply. We will continue to provide regular communication to let them know if the situation is stable, improving, or deteriorating. If we implement a TUB or NEUB, we will inform them of our decision as soon as reasonably practicable which should be prior to us submitting an application to impose restrictions, so that they can prepare to impose restrictions in their area. We will agree these timescales with the NAVs but it anticipated that they will be between 2-3 weeks on the basis that the NAVs are already being kept informed of our water resources position and so would not be surprised when a TUB requirement is announced.

Section 7.9 'Learning points from previous droughts and customer research' (p.123) will include the following text covering learning points from the 2022 drought, in addition to the existing wording covering learnings from the 2012 drought.

In September 2022, an investigation was conducted the Centre for Climate Change and Social Transformation and the University of Bath. Surveys were sent to Thames Water customers and the UK public to assess the impact of water efficiency messaging, drought messaging, and water use restrictions on UK consumers' water consumption, perceptions of water scarcity and drought, and perceptions of water companies. The key insights from this study were:

- TV/radio are the most common information sources about drought, followed by water companies, weather presenters, and directly observing changes.
- Water companies and government are seen as most responsible for communicating about drought.
- The EA, scientists and water companies are the most trusted sources of information.
- Two-thirds of those who received water-saving information from their water company said the information led them to save water.
- Images of weather maps and dried reservoirs were the most likely images to have prompted action.
- Images helped respondents to visualise the dangers of drought and the urgency of addressing heatwaves in relation to drought.
- Water facts (e.g. 'By 2050, our water supply will diminish by 35%, while our population doubles') were favoured over simple slogans (e.g. 'Save Water, Save Earth').

- This suggests that direct evidence (including photos or media coverage) of drought/heatwave impacts may be more persuasive than simple slogans, while factual educational materials may also be effective.
- Non-coercive 'pull' measures (e.g. incentives and water-saving devices) are more supported than coercive 'push' ones (e.g. water use restrictions).

Finally, section 7.10 on the Arica Drought Exercise (p.124) has been removed.

Section 8 Effectiveness of Plan

No changes are required to this section of the Drought Plan as a result of the 2022 drought.

Section 9 Conclusions

Section 9 (p.156) concludes the Drought Plan. There are no changes within this section other than the addition of the following paragraph. 'It includes updates following the 2022 drought event, which incorporates updates to our Communications Strategy, updates to our MB4 and Level 4 options following feasibility studies, and other immaterial changes to capture best practice from 2022.

Changes to Appendices

No changes are required to the appendices of the Drought Plan as a result of the 2022 drought.