draft Drought Plan 2027

May 2026

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Foreword

This report is the draft Drought Plan 2027 for Anglian Water. It provides an overview on how we propose to manage water resources during dry weather and drought to protect public water supplies, whilst minimising any environmental impacts that may arise as a result of our activities. It is an update of our final Drought Plan 2022.

This draft version is the first stage of the Drought Plan 2027 creation process. In line with the Drought Plan (England) Direction 2025[1] and associated guidance, we have updated our Drought Plan 2022 and submitted this to the Secretary of State for Environment, Food and Rural Affairs. We have been granted permission to publish this draft Plan and it will now undergo statutory public consultation. We will consider all representations and publish a revised draft Drought Plan 2027, along with a Statement of Response to explain how the representations have been addressed.

Finally, once approval has been received from the Secretary of State for Environment, Food and Rural Affairs, we will publish the final Plan.

Our Drought Plan sets out the management actions that we will take before, during and after a drought. It provides an overview of the operational and tactical actions for managing a drought were it to occur in the period 2027-2032. It also describes how we work with other water companies, regional water resources planning groups, regulators and key stakeholders.

The draft Drought Plan 2027 aligns with our Water Resources Management Plan 2024[2], which was published as a final version including revisions in April 2025.

The Water Resources Management Plan 2024 sets out our strategy for how we plan to meet current and future water resource requirements taking into account challenges such as climate change, needing to protect the environment and population growth. Information is also included on how we plan to ensure that by 2039 no customer will be exposed to rota cuts during an extreme drought. An extreme drought is defined as a drought event with an approximate 1 in 500-year return period.

To ensure alignment of the two Plans, we have reviewed the measures included in the Drought Plan 2027 to maintain secure water supplies, during the current reference drought (a drought with a 1 in 200-year return period), for all our water sources. Since the Drought Plan 2022 was published there have been two events (2022 and 2025) where the Environment Agency has classed parts of our region as being in Drought status. These periods of dry weather have helped to shape the updates to the draft Drought Plan 2027.

Our draft Drought Plan 2027 is structured in four parts:

- **Part 1: Drought framework, regional overview and technical background**
- **Part 2: Drought monitoring, levels and forecasting**
- **Part 3: Drought actions**
- **Part 4: Drought management and communications**

These can be read in order or separately.

1 Department for Environment, Food and Rural Affairs (2025) The Drought Plan (England) Direction 2025

2 Anglian Water Services (2025) Water Resources Management Plan 2024

1. Part One - Drought framework, regional overview and technical background

Part One of our draft Drought Plan 2027 presents the framework and relevant regulation for water company drought planning as well as an overview of our region and water sources. It also summarises the technical background which includes our drought vulnerability analysis and historic drought investment and how this links to our Water Resources Management Plan 2024.

1.1 Introduction

There is a statutory requirement for all water companies to prepare and maintain a Drought Plan that sets out how we will ensure continued supply to customers when water resources may become depleted during periods of low rainfall.

This is the draft Drought Plan 2027 for Anglian Water, that has been prepared to update our Drought Plan 2022. It builds on developments in our drought and water resources planning approaches, as well as feedback received during the pre-consultation phase.

This is the seventh formal Drought Plan that we have produced since the first in 2000. This Plan has been prepared following the Environment Agency's 'Water Company Drought Plan Guideline' (as updated in March 2025). In accordance with the guidelines, we completed a pre-consultation with key stakeholders and have now gained approval from the Secretary of State to publish the draft Plan for public consultation.

The draft Drought Plan 2027 is consistent with our Water Resources Management Plan 2024 (WRMP24) which sets out how we intend to secure water supply over the next 25 years. It is also consistent with the latest regional water resources plans for the regional water resources groups that we are included within.

Our draft Drought Plan 2027 considers our drought response for the Anglian Water region and Hartlepool, as shown in Figure 1.1.

The Drought Plan is a technical document written primarily for our regulators, as well as other technical stakeholders, following principles set out in the guidelines. A separate summary document provides a non-technical overview of our Plan and is available alongside our draft Drought Plan 2027. Our draft Drought Plan 2027 is structured in four parts (Table 1.1); these can be read in order or separately.

Figure 1.1 The Anglian Water region including Hartlepool

Table 1.1 Drought Plan sections overview

Drought Plan Part	Title	Content
Part One	Drought framework, regional overview and technical background	. Purpose of Plan . Regulatory framework . Regional overview . Bulk supply agreements, transfers and shared resources . Regional Water Resources Drought Groups . Links to WRMP24 and drought vulnerability
Part Two	Drought monitoring, levels and forecasting	. Our drought management strategy . Drought monitoring . Drought levels . Drought forecasting
Part Three	Drought actions	. Demand actions . Supply actions . Extreme actions . Emergency Drought Plan . Drought recovery and post drought actions . Alternative pathways . Environmental assessment
Part Four	Drought management and communication	. Drought management structure . Drought communications plan
Appendices		1 Water Resource Zones 2 Regional Water Resources Drought Groups 3 Drought monitoring 4 Demand actions 5 Temporary Use Bans & Non-Essential Use Bans 6 Drought permits 7 Extreme actions 8 Drought communication plan 9 Drought lessons learned

1.2 Purpose of the plan

Our Drought Plan has been developed in accordance with the requirements of the Water Industry Act 1991, as amended by the Water Act 2003, to describe how we as a "water undertaker will continue, during a period of drought, to discharge our duties to supply adequate quantities of wholesome water, with as little recourse as reasonably possible to Drought Orders or drought permits". The purpose of our Drought Plan is, therefore, to protect public water supplies whilst minimising any environmental impacts that may arise, as a result of our activities, during a prolonged period of low rainfall.

Every water company in England and Wales is required, by law, to prepare and maintain a statutory Drought Plan. Whilst Drought Plans are prepared in accordance with prescribed guidelines, they will each be different due to the different supply system characteristics of each water company. Approaches to demand management will also vary between different water companies. We carefully follow the legislation regarding water restrictions and seek as an industry to ensure consistent interpretation and application through an increased focus on regional water resources planning and liaison with Water UK and the Environment Agency managed National Drought Group.

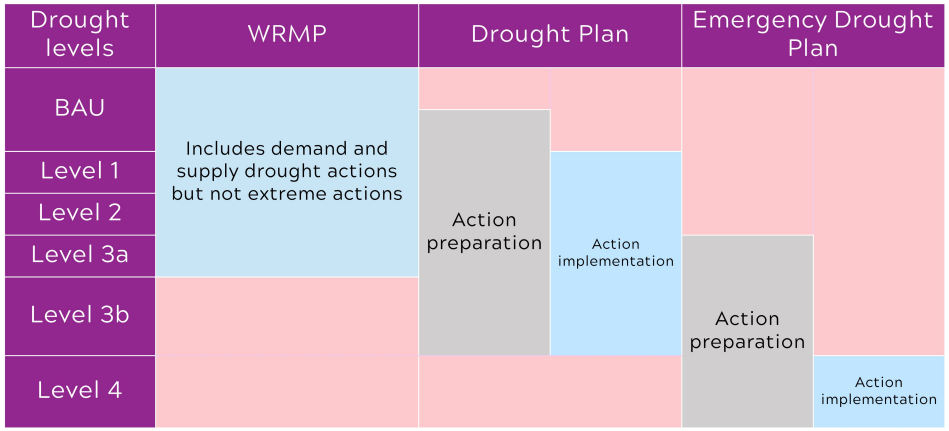
We will always seek to work together with other water companies and New Appointments and Variations (NAVs), and especially with our neighbouring companies and regional water resources groups. We would ensure that we are collaborating on joint actions, water transfers and communication with customers and stakeholders. This is especially important during times when we may need to impose water use restrictions.

In April 2017 the water retail market opened. As a result, business customers no longer buy water services from us directly and we work with retailers via our Wholesale Service Centre. As the wholesaler, we maintain our commitment to ensuring a secure supply of water for all customers.

Each drought varies in terms of intensity, duration, geographical coverage and impact. Our Drought Plan draws on previous experience in our region, alongside consideration of stochastically generated drought events, to ensure we are resilient to a range of different drought scenarios. This is in line with water resource planning guidance from the Environment Agency and Defra requiring water companies to have system resilience to the effects of severe drought (defined as an event with an approximate 1 in 200-year return period) as well as working towards system resilience to an extreme drought (defined as an event with an approximate 1 in 500-year return period).

We have reviewed the measures that we have in place to maintain secure water supplies during the appropriate reference drought as set out in our WRMP24. The Drought Plan sets out the management actions that we will take before, during and after a drought. The Drought Plan outlines a framework for managing a drought were it to occur under present circumstances with existing infrastructure. The Drought Plan does not include information on emergency measures that may be required during drought, this is covered in our Emergency Drought Plan (EDP). Further information on the EDP is in **Section 3.4**. Figure 1.2 shows the responsibilities of each Plan as a drought develops.

Figure 1.2 How our different Plans work together to support drought management



The Environment Agency is responsible for producing its own Drought Plan to protect the environment, water abstractors and the interests of other users of the environment. It has an overarching drought framework[3] and individual area specific Drought Plans which we seek to engage and align with as much as possible.

The Environment Agency acts as a technical advisor to government and as such, advises government on water companies' Drought Plans and publishes technical guidance on preparing Drought Plans. They are one of the key statutory consultees in the development and review of both our Water Resources Management Plan and Drought Plan.

It should be recognised that droughts are natural events that we cannot prevent and each drought is different. There is not one single definition of drought but there are three key classifications that we use to explain the overall response.

3 Environment Agency (2025) Drought: how it is managed in England

- **Environmental Drought** - Occurs when a shortage of rainfall is having a detrimental impact on the environment. It is likely that there will be reduced river flows, low groundwater levels and insufficient moisture within soils. These conditions could result in signs of stress for wildlife, fish and habitats - such as peat bogs and wetlands

- **Agricultural Drought** - This happens when there isn't enough rainfall and moisture in soils to support crop production or farming practices such as irrigation and water for livestock. Irrigation may be constrained by environmental conditions affected by drought such as low river or groundwater levels and statutory restrictions on abstraction licences. These drought conditions often happen alongside an environmental drought but usually before public water supplies are threatened.

- **Public Water Supply Drought** - This happens when a shortage of rainfall causes concern in relation to supplying water to customers. This type of drought will take longer to develop than the aforementioned classifications as water company supply systems are developed to cope with dry weather.

The main role of our Drought Plan and the associated actions are to mitigate against the possible impact of public water supply drought but as the different types of drought are likely to coincide we also aim to support other sectors where possible.

The differences in types of drought above mean that the Environment Agency may choose to announce that a catchment or the region is in drought due to wider environmental or agricultural concerns, as opposed to a concern over the security of public water supplies. This occurred in summers of 2022 and 2025. We will continue to work closely with the Environment Agency during such times to explain and clarify our individual roles and responsibilities to our customers.

The effectiveness of our management in previous droughts can be measured by the adoption of timely measures and responses that have enabled us to maintain the security of public water supplies. We believe that this current Drought Plan provides a robust approach to drought management and we are confident that it provides the flexibility we require to maintain future public water supplies.

1.3 Regulatory framework

Drought Plans are a statutory requirement under Section 39B of the Water Industry Act 1991, as amended by the Water Act 2003. Our Drought Plan 2022 has been prepared in line with the legal framework for drought planning as set out in:

- Water Industry Act 1991
- Water Act 2003
- Water Act 2014
- Drought Plan (England) Direction 2025
- Drought Plan Regulations 2005
- Flood and Water Management Act 2010
- Water Use (Temporary Bans) Order 2010
- Environmental Assessment of Plans and Programme Regulations 2004; from Strategic Environmental Assessment Directive 2001
- Conservation of Habitats and Species Regulations 2017
- Wildlife and Countryside Act 1981; as amended by the Countryside and Rights of Way Act 2000.

In accordance with the Security and Measures Direction 2022 (SEMD) and 2024 amendment, the Drought Plan has been formally reviewed by an independent SEMD certifier who has provided a certified statement of compliance. This confirms that our Drought Plan 2027 meets the appropriate redacting rules and requirements.

No information has been excluded from Drought Plan 2027 on the grounds that it is commercially confidential or would be contrary to the interests of national security.

Section 6 of the Drought Plan (England) Direction 2025 states that, for the purpose of section 37B(3)(a) of the Water Industry Act 1991, a water undertaker must produce the statement required by regulation 4 of the Drought Plan Regulations 2005(a) within 22 weeks after the date on which the water undertaker publishes a draft of its Drought Plan.

1.4 Consultation

1.4.1 Pre-Consultation

In line with guidance, we carried out pre-consultation using a couple of different methods. In January 2025 we took part in a Water Resources East (WRE) webinar alongside other water companies to share what our focus areas were for creating our next Drought Plan and to allow time for stakeholders to ask questions.

We also formally undertook our pre-consultation phase between November 2024 and January 2025. This was shared with the statutory bodies including the Environment Agency, Natural England, Historic England and Defra as well as a wide range of key stakeholders in our region, including but not limited to:

- Navigation authorities
- National parks
- Retailers and NAVs
- Regional water resources groups, neighbouring water companies and other abstractor groups
- Environmental Non-Governmental Organisations (eNGOs)
- Government, local authorities and local resilience forums (LRFs)

We received responses from a small mixture of stakeholders. Following the feedback, a summary of some of the updates we have made to this Plan are below:

- Worked with regional water resources groups to develop their Statement of Intents. Also provided updated information on working and aligning with neighbouring water companies
- Completed a full update of our environmental assessments to take into account lessons learned from previous dry weather events
- Updated our communications plan to match our current strategy including information about household, non-household, retailer and NAV communication. Stakeholder liaison with groups such as LRFs is also included
- Added reference to our Emergency Drought Plan explaining what it covers and noting that we will continue to develop it with key stakeholders in mind
- Updated our Lessons Learned Appendix to include learnings from 2022 and 2025

In addition, we have and continue to work closely with the Environment Agency, Natural England and Historic England to assess the potential environmental impact of the measures in our Drought Plan and to develop detailed Environmental Assessment Reports (EARs) for our drought permit options.

We have carried out consultation on our Strategic Environmental Assessment (SEA) screening, Habitat Regulations Assessment (HRA) methodology and EAR methodology reports to inform the SEA, HRA and EARs. Responses on this consultation were received from the Environment Agency, Natural England, and Historic England and have been fed into the environmental documentation where appropriate.

1.4.2 Public Consultation

We have received approval from the Secretary of State to publish our draft Drought Plan 2027 for public consultation.

The draft Drought Plan is available for consultation for a ten-week period to gain views of all key stakeholders and customers.

We will consider all representations and produce a Statement of Response to outline any changes we have made to our plan within 22 weeks of the publication of this draft Drought Plan 2027. The Secretary of State will then consider whether a Public Hearing is required and whether to issue directions for the final Drought Plan prior to publication.

1.5 Regional Overview

1.5.1 Our Region

Anglian Water currently provides water or wastewater services to more than 7 million customers in the east of England and the town of Hartlepool in the north-east. The region we supply, in the east of England, covers 22,000km^2 and is bounded to the north by the Humber Estuary and extends west to Northampton and Milton Keynes.

The east of England is the driest region in the UK, receiving two thirds of the national average each year; that's approximately 600mm. Our water resources are already under pressure: the region is designated by the Environment Agency as an area of serious water stress, and opportunities for new water resources are limited. Therefore, effective water resource planning and drought management is vital to ensure that we achieve and maintain the security of our public water supplies during drought events and peak demands, whilst taking due consideration of any associated environmental concerns.

Our region is predominantly agricultural, often being coined as the "bread basket of Britain". It is also one the fastest growing. The number of households we supply has grown by over 30 per cent since the water industry was privatised in 1989, and is expected to grow rapidly in coming decades.

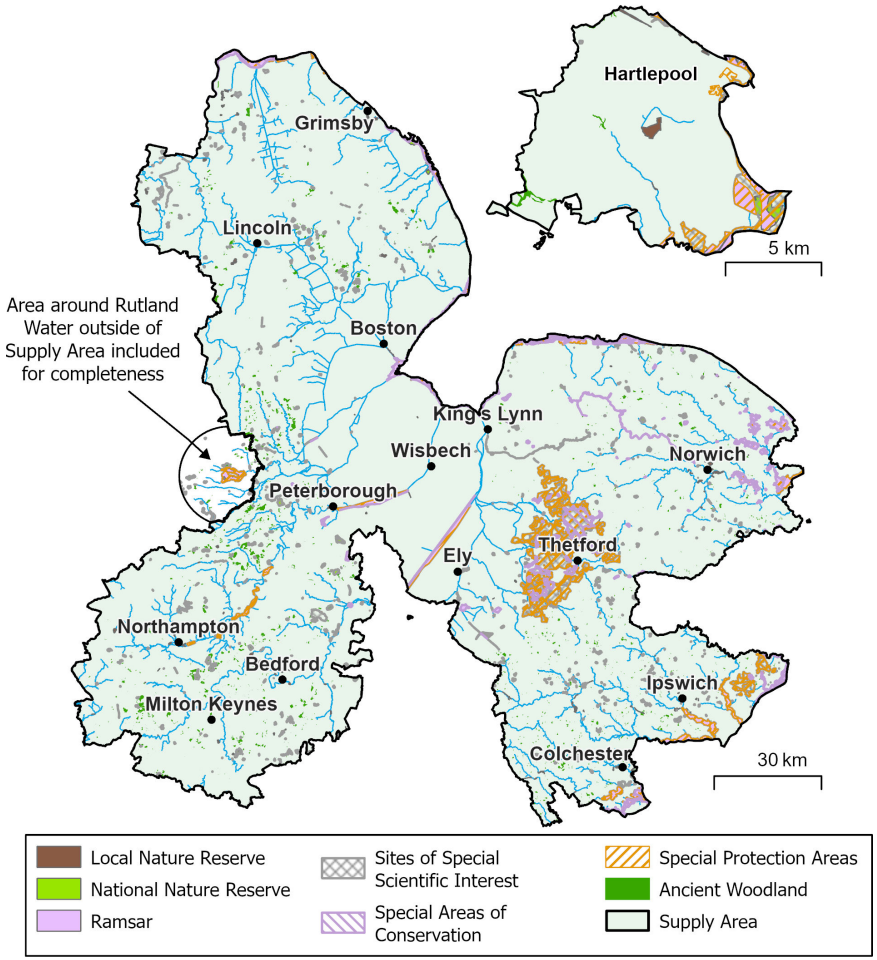
In addition, it is recognised as being particularly vulnerable to the impacts of climate change. Climate change projections show our region is expected to experience lower summer rainfall and increased evaporation, leading to lower groundwater recharge in the future. More frequent and intense downpours are also predicted. These could result in increased nitrate and pesticide run-off from fields, impacting the water quality of our region's rivers and groundwater.

It is essential that we maintain secure supplies of water in a sustainable way, as our business depends on a healthy, flourishing environment to supply clean water and receive recycled water after treatment. We work closely with Natural England, the Environment Agency, and other environmental groups to ensure we continue to manage water resources and the environment across our region sustainably. This help us to protect and enhance some of the unique habitats which are located within our region, including reedbeds, inter-tidal mudflats, and grazing marshes. Through our operations across the region, we are also directly responsible for some of our most important biodiversity habitats, protected at a national and international level (Table 1.2). This includes our reservoir, Rutland Water, which is a Site of Special Scientific Interest (SSSI), RAMSAR Site, and a Special Protection Area (SPA). Figure 1.3 shows all the conservation sites that sit within Anglian Water's operational boundaries.

Table 1.2 Designated areas that are within Anglian Water's direct ownership

Designation Type	Description	Anglian Water Ownership Area
Sites of Special Scientific Interest (SSSI)	National importance for flora, fauna, geology, or landforms	2,846ha
RAMSAR	Wetlands of global importance, especially for waterfowl	1,366ha
Special areas of Conservation (SAC)	Important habitats and non-bird species of European importance	12ha
Special Protection Areas (SPA)	Rare, vulnerable, or migratory bird species of international importance	1,575ha

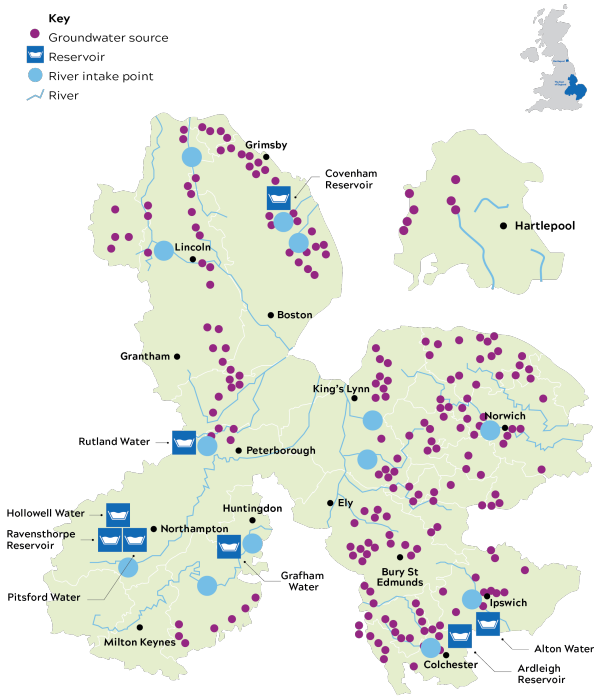
Figure 1.3 Map of Conservation sites in the Anglian Water Region



1.5.2 Our water sources

We abstract from a combination of groundwater and surface water sources across the region, as displayed below in Figure 1.4. On average, we supply around 1200 million litres of water per day (Ml/d) to our customers. This can peak at more than 1,400 Ml/d during high demand periods, as was experienced during the recent hot, dry weather in 2022.

Figure 1.4 Map of the water sources at Anglian Water



In the south west of our region, water supply is mainly provided by the large pumped storage reservoirs of Rutland Water, Grafham Water and Pitsford Water, and two natural catchment reservoirs, Ravensthorpe and Hollowell. These form a partially integrated supply system known as Ruthamford (the name deriving from Rut(land), (Graf)ham and (Pits)ford). The reservoirs within this system can support each other if needed. We provide supplies from Grafham Water to Affinity Water under the provision of the Great Ouse Water Act 1961.

We also operate pumped storage reservoirs at Covenham, Alton Water and Ardleigh. Ardleigh Reservoir is jointly owned with Affinity Water and operated under the provisions of the Ardleigh Reservoir Order under the governance of the Ardleigh Reservoir Committee (ARC).

We operate six key direct supply river intakes, which along with the reservoirs account for approximately 50 per cent of our supply.

The remaining 50 per cent of supply is provided by groundwater abstracted from approximately 200 sources comprising of around 400 operational boreholes. These range in depth from 10 m to 500 m, and penetrate several principal aquifers across the region, each of which will respond differently in a drought.

Our principal source of groundwater is from the Chalk, but the other aquifers we abstract from include the Lincolnshire Limestone, Sherwood Sandstone, Magnesian Limestone, Lower Greensand, Spilsby Sandstone, Sandringham Sands and a combination of crag, sands and gravels.

The Hartlepool Water supply area, to the north of the region, has higher average annual rainfall than the rest of our supply area. In Hartlepool water is abstracted from the deeply confined aquifer of the Magnesian Limestone. The nature of this aquifer combined with more rainfall means it is more resilient to changes in climate and water quality issues. Historically there have been no reported issues with low rainfall conditions affecting the availability of supplies.

1.5.2.1 Water Resource Zone integrity

The uneven nature of climate, drought, growth and environmental impacts across our region means we have developed Water Resource Zones (WRZs). WRZs are the geographical areas used to develop forecasts of supply and demand and supply-demand balances. The WRZ describes an area within which supply infrastructure and demand centres are linked such that customers in the WRZ experience the same risk of supply failure. From the WRMP24 we have 27 WRZs including South Humber Bank which is a non-potable WRZ that sits within Lincolnshire Central (see Figure 1.5). Further information on the WRZ characteristics can be found in **Appendix 1**.

Figure 1.5 Anglian Water WRZs as defined in the WRMP24

1.5.3 Bulk supply agreements, transfers and shared resources

We have long-standing statutory agreements for the transferring of water between neighbouring water companies such as Affinity Water and Severn Trent Water. We also have agreements in place for various other imports and exports with other water companies and NAVs. The key transfers are summarised in Table 1.3 and shown in Figure 1.6.

We have a number of other small transfers with companies such as Yorkshire Water, Cambridge Water and Thames Water as well as our transfers with NAVs such as Independent Water Networks Limited (IWNL), Advanced Water Infrastructure Networks (AWIN), Last Mile Water (Icosa Water is now included within this company) and MUA Water.

In the event of a drought the imports and exports in Table 1.3 would be subject to the same Levels of Service (LoS) as our customers (i.e. a 1 in 200-year drought). We have agreed with our neighbouring water companies and NAVs that regular communication and close liaison will be very important during dry weather and drought to minimise any impacts to the respective supply areas.

Under the terms and conditions of the transfer arrangements with NAVs, there is a requirement for these companies to impose the same restrictions, that Anglian Water imposes on their domestic customers. The alignment of these activities will be managed by our dedicated Wholesale Market Services team in collaboration with the Drought Management Team (DMT).

A full list of agreements can be found in **Section 9 of our WRMP24 Supply Forecast technical document**.

Table 1.3 Key transfers and shared resources (volumes that each party receives) as set out in WRMP24

Transfer type	Associated WRZ	Company	Volume (Ml/d)	
			Average	Peak
Bulk export	Ruthamford North (Rutland)	Severn Trent Water	18	18
Bulk export	Ruthamford South (Grafham)	Affinity Water	88.5	109
Bulk import	Essex South (Tiptree)	Essex and Suffolk Water	3	4.5
Bulk import	Suffolk Thetford (Barnham Cross)	Cambridge Water	0.25	0.25
Shared resource	Essex South (Ardleigh)	Affinity Water	11.8	18

1.5.3.1 Ruthamford North (Rutland) - Severn Trent Water

The bulk export from Rutland to Severn Trent Water is split over two exports at Oakham (12 Ml/d) and Benfield (6 Ml/d).

1.5.3.2 Ruthamford South (Grafham) - Affinity Water

The bulk export from Anglian Water to Affinity Water is governed by the Great Ouse Water Act 1961 (GOWA). The average value quoted in Table 1.3 is the 2025/26 figure from WRMP24 and takes into account resilience to 1 in 200-year droughts and future climate change. This figure reduces over time due to further drought resilience and climate change impacts.

During normal and drought operation, where the available output at Grafham WTW is insufficient to provide Anglian Water and Affinity Water with their share (under the GOWA), both companies work together to manage each company's requirements for water.

1.5.3.3 Essex South (Tiptree) - Essex and Suffolk Water

The bulk import from Essex and Suffolk Water supplies our Tiptree area, which has limited connectivity to the wider AW system.

1.5.3.4 Suffolk Thetford (Barnham Cross) - Cambridge Water

The Barnham Cross import is a continuously operated bulk transfer between Cambridge Water and Anglian Water, available up to and including drought Level 3. We do not expect the transfer to exceed the 0.25 Ml/d volume agreed.

1.5.3.5 Essex South (Ardleigh) - Affinity Water

Ardleigh is a shared water resource between Anglian Water and Affinity Water. The sharing agreement is governed by the Ardleigh Reservoir Order 1967 and the reservoir is managed by the ARC who are responsible for the operation, repair and maintenance of the joint works. However, the day-to-day operation is undertaken by Anglian Water. During normal and drought operation, either company can take water from Ardleigh not required by the other company following agreement from the ARC.

Figure 1.6 Key transfers and the shared resources set out in WRMP24

1.5.4 Regional drought planning, collaboration and coordination

Following the 2011-2012 drought, collaboration and cooperation continues to improve between the water industry, the Environment Agency and other key stakeholders. In February 2012 the Secretary of State set up the National Drought Group (NDG); in which Anglian Water took a leading role.

The purpose and remit of the NDG was to create a single coherent, cross sector team, which was able to manage coordinated delivery of drought management activities, communications and risk mitigation. The NDG continues to evolve with three key subgroups (Water Supply; Environment, Agriculture and Land Use; Communications) feeding into the main group all being attended by a wide variety of stakeholders.

This need for collaborative and joined-up drought thinking has continued to grow. We remain part of the NDG, attending regular meetings as required and providing input into the Drought Health Check and Prospects reports. We continue to work closely with the Environment Agency and other stakeholders including neighbouring water companies with meetings increasing in frequency as prolonged dry weather intensifies.

Regional water resources groups are alliances made up of water companies, key water users and stakeholders. These groups produce strategic plans to cover the future water resources needs for their region. These plans cross water company boundaries within the region and address the future needs for public water supply and other sectors, such as agriculture, energy production and industry. The plans are developed to identify coordinated and best value solutions to secure future water supplies and environmental resilience at a regional level, and together, at a national level.

Regional water resources groups don't have Drought Plans but are uniquely placed to support collaboration across sectors during a drought. As such each group has setup regular drought meetings to share information and support stakeholders. Due to the region that Anglian Water covers we are an active participant in three regional water resources drought groups (Figure 1.7) - Water Resources East (WRE), Water Resources South East (WRSE) and Water Resources North (WReN). We are keen to support other sectors wherever possible, and we use the regional water resources drought groups to discuss opportunities to increase drought resilience as well as investigating ways to share water when it is available. **Section 2.2.4** provides some examples of existing measures used to support other sectors that are discussed within the regional groups.

Each of these groups has created a statement of intent in collaboration with its members clearly setting out the role they will take in drought. A summary of the statement of intents is noted below with the full versions made available in **Appendix 2** as well as on each regional group's website.

Figure 1.7 Regional water resources groups

1.5.4.1 Water Resources East statement of intent summary

The Environment Agency's Water Resources National Framework (WRNF25) published in June 2025 sets an expectation for regional groups to develop a drought Statement of Intent that clearly explains the role they will take in drought planning and management. As such, WRE's Statement of Intent:

- Outlines the Terms of Reference of the WRE Drought Group.
- Sets out the actions the WRE Drought Group will take in a drought, and what falls outside its role.
- Demonstrates a commitment to ensure a good representation of all sectors, including water companies, internal drainage boards, agriculture and horticulture, energy, industry and amenity stakeholders in a drought scenario.
- Aligns with other regional groups, existing drought governance and drought planning arrangements.
- Will be reviewed and signed off annually by the WRE Drought Group.

Formed in response to the 2022 drought, the WRE Drought Group was established to facilitate opportunities for improved communication and drought management across sectors, seeking to both provide support for abstractors and protect the environment during periods of dry weather across the region.

The WRE Drought Group aims to improve East Anglia's resilience to drought across all sectors. It seeks to facilitate knowledge sharing and improve understanding of water and drought management across its members. It supports its members to plan for drought, and encourage alignment of drought responses and communications.

WRE's Drought Group focuses primarily on the catchments within the Environment Agency's East Anglia Area (Norfolk, Suffolk, Essex and Cambridgeshire) and the Lincolnshire, Bedfordshire and Northamptonshire Area.

The WRE Drought Group will:

- Have a pan-sectoral focus across member organisations represented in the region.
- Enable increased visibility of areas of water stress across the region and members' dry weather and drought activities.
- Support and encourage all sectors to plan for drought, considering their risks, needs and actions before, during and after a developing drought situation.
- Support alignment on members' drought plans across the region.
- Facilitate collaborative discussion within and between sectors to promote regional alignment on sharing water resources and implementing water use restrictions during drought.

- Identify and champion opportunities for improved water resources allocation and management across sectors, to explore ways to improve drought resilience and reduce the impact of drought conditions on key abstractors and the environment.
- Support WRE's wider efforts to work with the agricultural sector to develop local resilience options.
- Promote drought knowledge sharing through the WRE Drought Group meetings, drought webpage and other channels as appropriate.
- Consider the needs of the environment, including water-dependent habitats and other sensitive environmental sites, in all drought management activities. The group commits to pursuing drought management options that protect and enhance the natural environment
- Coordinate regional drought activities as outlined in the drought response framework.

The WRE Drought Group will not:

- Have a formal decision-making role nor is accountable for how water supplies and drought options are managed.
- Develop a regional Drought Plan, nor does it aim to override an organisation's own Drought Plans.
- Require members to fully align on activities. It will not require members to share information beyond a level they feel is appropriate for their organisation.
- Proactively engage in drought-related communications unless requested by one or more Drought Group members.

The full Statement of Intent, along with other drought material, can be found on WRE's website.

1.5.4.2 Water Resources South East statement of intent summary

WRSE provides the framework for **coordinated drought planning across company boundaries**, ensuring that water companies share information on hydrological conditions, risks, and potential impacts at a regional scale. They help develop a **common regional understanding of drought severity**, support alignment of triggers and actions where appropriate, and identify cross boundary issues that individual companies may not see in isolation.

During a drought, regional groups act as a **coordination and communication hub**, helping companies maintain consistent messaging, understand regional pressures, and escalate issues collectively to the Environment Agency or Defra. They do not replace company level decision making but strengthen it by ensuring that actions are regionally coherent and based on shared evidence.

Further detail of how WRSE plans to support water companies in the South East region, during prolonged dry weather and drought events is included in the Statement of Intent provided in **Appendix 2** and on the WRSE website.

1.5.4.3 Water Resources North statement of intent summary

WReN launched their multi-sector Drought Group in early summer 2025 with the first meeting in May 2025. The group serves as a regional forum that facilitates collaboration between sector groups (e.g. public water supply, agriculture, energy and navigation), regulators and wider stakeholders to enhance regional preparedness for periods of prolonged dry weather and drought events. The aims and operations of the Group will change based on whether conditions are before drought (preparedness phase), during drought (response phase) and after drought (recovery phase) and will include the following:

- monitoring and sharing sector information on current and forecast water situations
- sharing best practice
- aligning communications and messaging
- promoting development of sector plans
- actively seeking and facilitating identification of opportunities and options to manage drought response and in the development of water management plans
- evaluating and incorporating lessons learned into the drought planning process

WReN's role does not include the development of a regional Drought Plan, or aim to override an organisation's own Drought Plan but seeks to support in the facilitation of collaborative discussion within and between sectors where this helps the overall outcomes of managing drought response for society and the environment.

The group commits to pursuing drought management solutions that protect and enhance the natural environment and social needs.

The full WReN Drought Group Statement of Intent can be found in **Appendix 2** and on the WReN website.

1.6 Technical Background

1.6.1 Water Resource Planning

1.6.1.1 Relationship with Water Resources Management Plan

Water companies have a statutory obligation to prepare and maintain a Water Resources Management Plan (WRMP), published every five years. In the WRMP, companies must set out how they will ensure that they have sufficient water resources to meet the current and future demands of their customers, over a minimum 25-year period.

We published our final WRMP24 including revisions in April 2025. The overall aim of our WRMP is to develop a system of supply that is reliable, affordable and sustainable. This includes meeting customer and government expectations and complying with all statutory obligations. We achieve this through a twin track approach of an ambitious demand management programme and investing to improve the resilience of public water supplies to climate change, more severe drought and environmental pressures.

The WRMP ensures we have a long term plan to be resilient to drought, and sets out how we will secure supplies for a drought event of up to a 1 in 200-year severity and how we are moving towards 1 in 500-year drought resilience by 2039. This is in line with the latest guidance, requiring water companies to consider droughts beyond the historic record.

Our Drought Plan 2027 complements this, setting out actions we will take within the reference period noted in WRMP24.

1.6.1.2 Levels of Service (LoS)

Since the 2011-12 drought, we have been concerned that parts of our system are vulnerable to drought and we would not be able to maintain supplies to customers without imposing emergency restrictions, such as rota cuts.

As a result, in preparing our WRMP24 we thought carefully about what LoS are appropriate for our customers and our region. The return period of all the following LoS can be found in Table 1.4. We believe that our LoS are appropriate and will not make any changes to them in either our WRMP24 or Drought Plan 2027.

Table 1.4 Levels of Service (LoS)

LoS	Action	Frequency (years)
2	Temporary Use Bans (TUBs)	1:10
3	Non-Essential Use Bans (NEUBs)	1:40
4	Rota Cuts	>1:200

1.6.2 Previous drought management and investment to date

Our water resources and supply systems have been developed over the last 150 years to meet increasing demands for water and to cope with droughts. This has been achieved through the construction of strategic storage reservoirs with long retention periods and development of local groundwater supplies. The volume of water that we have supplied to our customers is referred to as Distribution Input (DI).

There have been a number of droughts that have affected the Anglian region in the last 60 years (1975- 76, 1988-92, 1995-97, 2005-06, 2011-12, 2022-23 and 2025). Each of these periods of exceptionally low rainfall affected water supplies to various extents, with some affecting parts of our region more severely than others. The prolonged drought experienced in 1975-76 was the first that received widespread attention and began to underpin future water resource drought planning for the Anglian region. The two most recent periods of prolonged dry weather to test our response was during 2022-23 and 2025-26. These years were different to previous events due to their high intensity and relatively short duration. They also had abrupt ends with significant winter rainfall causing flooding. The fluctuating summer and winter extremes that we are experiencing are consistent with climate change projections.

The lessons we have identified from our response to previous droughts as well as periods of dry weather and high demand have been used to inform our current Drought Plan. This is further detailed in **Appendix 9**. We are confident that our Drought Plan provides a robust framework to enable us to maintain supplies to our customers.

Parts of the region are well served through the interconnection of strategic trunk water mains, adding to the security and flexibility of the system. We continue to invest in the distribution system in order to improve integration that will enable us to meet local growth in demands, improve security of supply and manage groundwater quality, notably as a result of increasing diffuse source contaminants such as pesticide compounds and nitrates.

Our WRMP24 sets out how we will be continuing to invest in assets to ensure they are drought resilient.

1.6.3 How drought affects our resources

Our resources are dependent on both the intensity and the duration of a rainfall deficit. The type of drought also influences the response of our sources. This is because of the different characteristics of each source and how it reacts to drought conditions. The water resources of our region depend largely on winter rainfall, recharge and reservoir refill because during the summer evaporative demand often exceeds rainfall. Therefore, our region is more vulnerable to drought events which include more than one dry winter period. We work hard to ensure that we enter summers in a good water resources position and maximise refill during the winter when water availability increases. Our WRMP and Drought Plan are tailored to ensure risks are effectively managed across our supply system.

We have summarised the different drought responses of our sources in **Table 1.5**.

Table 1.5 Water resource type summary and drought response

Resource	Source of water	Resource type	Response to rainfall	Drought resilience*
Reservoirs	Water pumped from nearby rivers / natural inflow / direct rainfall	Small single season e.g. Ardleigh reservoir	Storage responds quickly to changes in rainfall and reservoir levels can quickly drop. However, they also tend to recover quickly once river flows pick up	Low
		Large multi-season e.g. Rutland Water	Greater storage volume means reservoir storage depletes slower and can withstand longer periods of low flows. However, it takes longer to recover once levels have declined	High
Rivers	Surface water runoff from land and groundwater base flow	Overland runoff dominated e.g. River Trent	Flashy and responds quickly to high or low rainfall situations. This means flows can decline quickly but also increase quickly	Typically low, except for larger rivers or those supported by effluent returns
		Overland runoff / base flow split	Combination of overland and baseflow rivers	Medium
		Base flow dominated e.g. River Wensum	Slower response to rainfall changes as these rivers are bolstered by groundwater. This means they can maintain higher flows for longer but take longer to recover from low flows	Medium
Groundwater	Underground aquifers	Chalk e.g. Marham Sandstone e.g. Raithby Limestone e.g. Aslackby Confined e.g. Spilsby Sandstone Unconfined e.g. Chalk outcrop	Groundwater responds more slowly to rainfall patterns because there is a lag time between rain falling on the ground and percolating through to the aquifer. This generally means groundwater sources are more resilient to shorter dry spells, but it depends on the type of aquifer and its degree of confinement. We have identified within this Plan where sources are drought vulnerable	Generally high (except for drought vulnerable sources)

* Drought resilience refers to resilience against dry winters. A source with low resilience indicates it is more vulnerable to shorter drought events and is more likely to be affected more often.

1.6.4 Drought vulnerability and testing

The full details of the technical methods and scenario testing used to assess the drought vulnerability of our water resources can be found in the **WRMP24 Supply Forecast Report**. The following text provides a summary of this work.

1.6.4.1 Reference drought

In WRMP24 we assess the drought vulnerability of our sources against a reference drought, which aligns to an event of 1 in 200-year severity.

During our WRMP24 preparations, we undertook a drought vulnerability analysis to understand and quantify the risk to our system from a range of drought events. This included developing a suite of stochastically generated drought events to test droughts more severe than historically experienced (**WRMP24 Supply Forecast Report**). This analysis showed that many of the historic drought events experienced in our region were more severe than previously understood and, due to significant investment in drought schemes, many of our systems are already resilient. Investment has been identified and planned where future licence changes may affect resilience.

Where appropriate the drought levels that have been assigned to our sources in Drought Plan 2027 have been tested against the WRMP24 reference drought.

Reference drought terminology

Historic drought -refers to the worst historic drought on record. This was previously assumed to be drought events with approximately a 1 in 100-year return period, which we describe as having a 25 % chance of occurring over a 25-year planning period.

Severe drought -refers to drought events with approximately a 1 in 200-year return period. We describe these events as having a 12 % chance of occurring over a 25-year planning period.

Extreme drought -refers to a drought events with approximately a 1 in 500-year return period. We describe these events as having a 5 % chance of occurring over a 25-year planning period.

1.6.4.2 Managing the impact of Drought

To ensure we can maintain supplies to all our customers, without having to impose emergency restrictions, such as rota cuts, in our WRMP24 we have proposed the investment we need to develop an equivalent capacity from new supplies by the end of AMP8 and beyond. This is to replace resource lost through licence capping.

We have also considered our drought risk to extreme drought events, up to 1 in 500-year severity, to which nearly the entire region shows some degree of vulnerability. We have planned to meet system resilience to this extreme drought by 2039.To manage this risk in the meantime, we have considered wider WRZ level options such as conjunctive use, bulk supplies, inter-catchment transfers and tankering. All these possible options are detailed within **Appendix 7**. In an extreme drought, we may also have to consider employing emergency restrictions such as rota cuts. We do not consider standpipes to be a practicable option.

1.6.4.3 Drought and climate change

The combined effect of drought with increasing climate change also needs to be considered. We have looked at this in the WRMP24 through an assessment of all Anglian Water groundwater and surface water sources. We considered the elements conjunctively to assess the combined impact throughout the WRMP analysis. An allowance for climate change impacts was included in the WRMP24.

2. Part Two - Drought Monitoring, Levels and Forecasting

Part Two of our draft Drought Plan 2027 focuses on how we utilise monitoring, levels and forecasting techniques to ensure we are effectively managing periods of dry weather and drought.

2.1 Drought Management Process

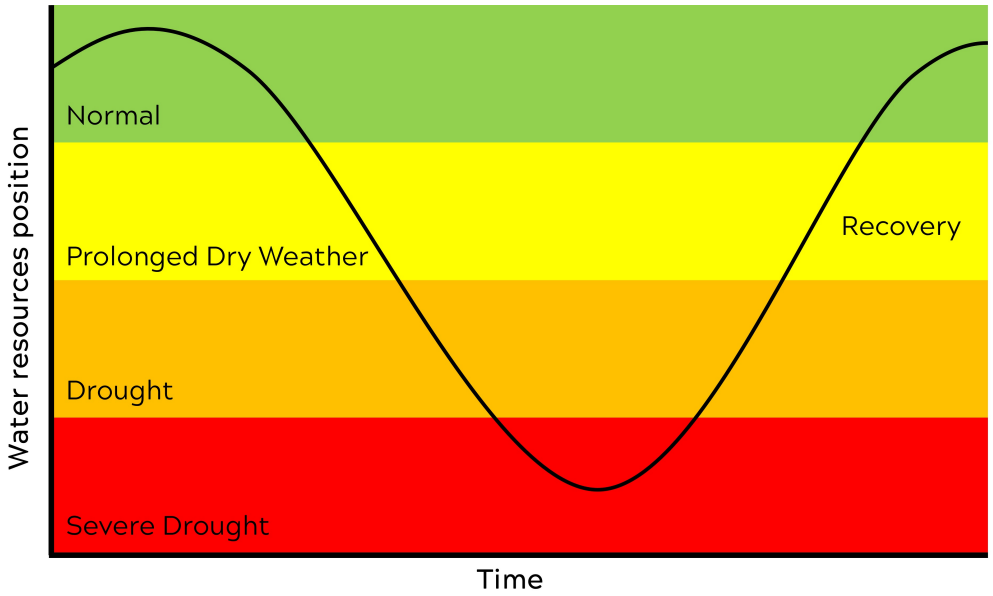
Droughts differ in terms of location, intensity, duration and severity. They can also impact other sectors (e.g. agricultural and environmental) in a variety of different ways and often over different timescales.

In England, the main organisations responsible for managing water resources during droughts are:

- **Environment Agency** - provides strategic oversight and responsible for monitoring, reporting, advising and acting to reduce the impact of a drought on the environment and water users
- **Government** - responsible for policies relating to water resources
- **Water Companies** - responsible for managing water supply for their customers and taking a range of measures to maintain supplies whilst minimising environmental impact

Due to their responsibility the Environment Agency have created their own Drought Plans to manage drought at both the national and local scale. They have Drought Plans for each of their 14 operational areas which tells their operational response teams how to plan for and respond to a drought incident in their area. To enable them to do this effectively their plans set out how they determine when an area enters a certain drought stage and their associated actions (Figure 2.1). The Environment Agency uses both hydrological thresholds as well as environmental indicators to trigger entering a different drought stage.

Figure 2.1 Drought stage development over time



Instead of using drought stages water companies such as Anglian Water use drought levels - Business as Usual (BAU) and Level 1 through to 4. These drought levels are mainly determined by the water resources status of and risk to public water supplies.

The Environment Agency and water companies work together to align their drought management approaches as much as possible (Table 2.1). However, due to their different roles and the different factors used to determine the status or level this is not always possible. For example, a lack of rainfall, impacts on river flows and environmental stress can be induced by drought before any risk to public water supply appears meaning that the Environment Agency may designate a catchment to be in Prolonged Dry Weather or Drought status before a water company that operates in that area moves to Level 1. Regular communication during periods of dry weather and drought ensure that both bodies are aware of each other's status and allows opportunity for support and aligned action when appropriate.

Table 2.1 Environment Agency drought stages and water company drought levels

Drought stages	Drought levels
Normal (green)	Business as Usual (BAU)
Prolonged dry weather (yellow)	1
Drought (amber)	2
	3a
Severe drought (red)	3b
	4

Our drought management process provides a flexible framework of options that will allow us to respond most effectively to a drought for a wide range of situations. Our drought management process has been developed for our region; it is relevant and realistic for our unique operating systems and circumstances.

Our drought levels require different responses, so we have developed drought indicators to help identify when we may need to cross into the next level and when actions need to be taken in a timely fashion, from its onset to its end. The drought levels and associated actions are summarised in Table 2.2.

It is important to note that our drought levels and actions are guidelines for when drought levels are determined or actions are to be implemented. If the potential risk to public water supplies is likely to be realised earlier than the levels noted on our water sources, then we reserve the right to change our drought status and implement actions proactively. Table 2.2 is therefore to be taken as a guide only as every drought is different.

During BAU conditions we continue to routinely monitor weather metrics and our resources to understand the baseline conditions and what rainfall is required to ensure secure supplies. We then have early warning indicators to signpost changes to weather that may indicate that a period of dry weather or drought is developing.

Aquifer recharge and reservoir refill are the most critical issues in autumn and winter, whereas surface water flows are the most critical in spring and summer.

Our drought actions are phased in as dry weather intensifies. The actions are cumulative and routine measures or those introduced during less severe drought conditions will continue to be in place as further actions are considered and implemented.

We will consider the time of year, complexity, lead times, implications on customers and the environment when developing and implementing this phased approach.

The other sections in **Part 2** discuss drought monitoring, levels and forecasting in more detail. **Part 3** includes further detail on the drought actions and then **Part 4** covers our drought management structures and communications.

Table 2.2 Drought management framework

Drought Level		Business As Usual (BAU)		Level 1	Level 2	Level 3	Level 4
Drought Indicators	Early Warning Indicators	All indicators at or above average	Indicators begin declining trend	Declining trend towards dry weather and drought levels	Indicators close to or at historic drought year(s)	Indicators at or lower than historic drought year(s)	
		12-month rolling SPI, SSI, SGI > 0	12-month rolling SPI, SSI, SGI 0 to -1.0	12-month rolling SPI, SSI, SGI -1.0 to -1.5	12-month rolling SPI, SSI, SGI -1.5 to -2.0	12-monthly rolling SPI, SSI, SGI < -2.0	
		Winter SMD < 20mm	Winter SMD ~20mm	Winter SMD > 20mm	Winter SMD >> 20mm and prohibiting recharge		
	Overall Regional Resource Classification	Indicators sites at normal or above levels	Some indicator sites below normal levels	A number of indicator sites below normal to notably low levels	Majority of indicator sites notably low to exceptionally low levels	All indicator sites notably low to exceptionally low levels	
	Reservoirs	Reservoir storage at or above target curve	Some reservoirs below target curve and trending towards Level 1	Reservoir levels below Level 1 and trending towards drought permit application triggers	Reservoir storage crossed drought permit application triggers and Level 2 curves	Reservoir storage crossed Level 3	Reservoir storage crossed Level 4
	River Flows	River flows classified as normal or above	Some river flows classified as below normal. Reactive sources trending towards Level 1	Most river flows classified as below normal to notably low. Sources cross Level 1	Majority of river flows classified as notably low to exceptionally low. Sources cross Level 2	All river flows classified as notably low to exceptionally low for the time of year. Flows likely to be at or below historic drought years Some river intakes unable to abstract due to low flows	
	Groundwater	Groundwater levels classified as normal or above	Some groundwater levels classified as below normal. Reactive sources trending towards Level 1	Most groundwater levels classified as below normal to notably low. Sources cross Level 1 for 3 consecutive months. Consideration is given to time of year, relative to recharge season and forecasts. Some possible minor operational impacts.	Majority of groundwater levels classified as notably low to exceptionally low. Sources cross Level 2 for 3 consecutive months. Consideration is given to time of year, relative to recharge season and forecasts. Operational sources approaching DAPWLs, with probable minor operational impacts.	All groundwater levels classified as notably low to exceptionally low and levels likely to be at or below historic drought years. Sources crossed Level 3 for 3 consecutive months. Consideration is given to time of year, realtive to recharge season and forecasts. Abstraction at operational sources likely to be impacted	
Indicative Response / Actions*	Resource Monitoring	Daily abstraction, river flow and reservoir level monitoring. Weekly rainfall and SMD monitoring. Monthly groundwater dip monitoring. Additional indicators (SPI, SSI and SGI) reviewed	Enhanced water level and quality monitoring e.g. monitoring increased to weekly for groundwater dips. Additional focus on resource levels most at risk	Daily monitoring & resource tracking at all risk sites			
	Resource Forecasting	Monthly river flow forecasting. River, reservoir and groundwater forecasting for internal and external Spring and Autumn Outlook	Monthly forecasting of all at risk sites	Enhanced frequency of resource projections to allow further decision making (often requested by DMT)			
	Communications & Water Efficiency	BAU 'water wise' messaging and efficiency campaigns focusing on knowledge sharing and behaviour change	Dial up tone and frequency in communications and target hotspot areas with wide variety of available channels including paid for activity	Communicate the seriousness of the situation using visual cues and more direct language. Enhancements and escalations as situation deteriorates			
	Leakage & Pressure Optimisation	Baseline leakage and pressure optimisation activities	Enhanced leakage detection and repair and pressure optimisation targeted in hotspot areas				
	Demand Restrictions	N/A	Voluntary reductions in usage	Impose Temporary Usage Bans (TUBs)	Impose Non-Essential Usage Bans (NEUBs)	Impose rota cuts	
	Supply Operations	Routine operations	Review need for proactive maintenance, prioritise drought related investment and optimise abstraction regimes	Implement supply side options and drought related investment as required			
	Drought Permits & Environmental Monitoring	Keep drought permit documentation application ready Baseline environmental monitoring within drought permit catchments	Determine likely need for drought permits and prepare applications. Winter drought permit applications may be needed before Level 2. Enact Level 1 environmental monitoring	Apply for and implement drought permits Enact drought permit implementation environmental monitoring			
	Drought Management Team (DMT)	DMT meets twice a year to review spring and autumn outlook	DMT meets monthly Local DMTs meet regularly	DMT plus Drought Response Team Local DMTs continue to meet regularly			
	Stakeholder Liaison	Routine liaison with stakeholders	Initiate targeted liaison with key stakeholders e.g. Environment Agency and neighbouring companies. Start-up and engage in drought specific group meetings	Increase liaison with key stakeholders ensuring everyone is aware of current and potential actions including restrictions			

* Actions in each stage are cumulative and include the previous stage action

2.2 Drought Monitoring

We are always monitoring the water resources situation whatever the weather. This section details the different data sets and indicators that we use to help determine the water resources risk. There is also information on how we manage abstraction licences as well as a summary of how we monitor and support the environment throughout dry weather.

2.2.1 Drought Monitoring Data Sets

Throughout the different water resources conditions, we undertake systematic monitoring of meteorological and hydrometric parameters routinely. This includes the collection of data sets outlined in Table 2.3 and Table 2.4, which encompass rainfall, river flows, reservoir levels, and other key hydrological indicators. In addition to these datasets, telemetered water quality information is continuously received from strategically positioned monitoring stations throughout the catchment and at abstraction points. These data streams enable us to maintain oversight of water quality status across our supply network and to develop informed abstraction management plans for reservoir and groundwater sites.

Furthermore, resource availability within rivers, reservoirs, groundwater sources and aquifers is assessed through a combination of telemetered measurements and direct engagement with operational teams. This collaborative approach ensures accurate evaluation of groundwater and reservoir storage levels, supporting proactive decision-making for water supply management. Based on these inputs, we compile and issue a weekly report summarising current reservoir levels and their alignment with established target curves, providing a clear benchmark for operational planning.

In parallel with our internal monitoring activities, we incorporate a range of external intelligence sources to contextualise resource status within broader climatic trends. This includes reviewing the monthly situation report from the Environment Agency, three-month weather outlook from the Met Office, and hydrological assessments produced by the UK Centre for Ecology and Hydrology (UKCEH), alongside the National Hydrological Summary. These documents provide critical insights into prevailing and forecasted conditions, enabling us to anticipate potential risks and opportunities for resource management.

The findings from these external reports, combined with our own monitoring data, are synthesised into a comprehensive monthly situation report. This report offers a consolidated view of resource status and climatic conditions and is disseminated internally within Anglian Water to inform strategic and operational decision-making across relevant teams.

As outlined above various external and internal data sets are used within our drought monitoring approach. The majority of data collected from external parties such as the Environment Agency is used through open licence agreements but there are some data sets that are governed by private licence agreements that only allow internal analysis and use.

Table 2.3 Meteorological, climatic and water quality data collected

Parameter	Definition	Frequency	Source	Purpose
Mean Rainfall by MORECS Squares (mm)	A measure of average rainfall within 40km x 40km square grids	Weekly	Met Office MORECS data	Compare to long term average (LTA) rainfall to track rainfall patterns across the region and in specific areas
Rainfall by Hydrological Area (mm)	A measure of total rainfall across the hydrological catchment	Monthly	Environment Agency	To understand rainfall variations across the region and particular catchments
Mean Potential Evapotranspiration (PET) (mm)	A measure of the ability of the atmosphere to remove water from the surface through the processes of evaporation and transpiration	Weekly	Met Office MORECS data	Understand water demand from soils and vegetation and as an indicator of water balance
Mean Actual Evapotranspiration (AET) (mm)	The quantity of water that is actually removed from a surface owing to the processes of evaporation and transpiration	Weekly	Met Office MORECS data	Understand water demand from soils and vegetation and as an indicator of water balance
Mean Soil Moisture Deficit (SMD) (mm)	The amount of rainfall required to replenish water loss due to plant growth and evaporation	Weekly	Met Office MORECS data	Understand water demand from soils and vegetation and as an indicator of water balance
Mean Temperature (°C)	A measure of average temperature	Weekly	Met Office MORECS data	Understand potential demand related impacts
Effective Precipitation (mm)	A measure of the amount of precipitation that is available for use in the environment after losses by evaporation	Weekly	Met Office MORECS data	To understand areas where we may be seeing recharge to groundwater and rivers
Water Quality Sampling (various determinands e.g. nitrate)	A measure of the water quality in the wider catchment, rivers, reservoirs and groundwater sources	Hourly / Daily / Weekly	Telemetry and Manual samples	To understand water quality in the catchment and our sources allowing creation of abstraction management strategies

Table 2.4 Hydrometric data collected

Parameter	Frequency	Source	Purpose
River flows	Daily / Monthly	Telemetry or spot flows from Environment Agency river gauging stations across the region	Monitoring changes in river flows and levels to understand risks to abstraction
Reservoir levels (% storage)	Daily	Telemetry from Anglian Water sources	Monitoring fluctuations in reservoir storage against a normal 'target' reservoir storage curve
Groundwater levels from observation groundwater sources	Daily / Monthly	Telemetry or manual dips from a range of sources e.g. Environment Agency, Anglian Water or private sources	Monitor groundwater levels at indicator boreholes
Groundwater levels from operational groundwater sources	Daily / Monthly	Telemetry or manual dips from Anglian Water operational staff	Monitor levels at Anglian Water operational groundwater sources with a particular focus on drought vulnerable sources
River, Reservoir and Groundwater abstraction	Daily	Telemetry from Anglian Water sources	Monitor abstraction levels against licence conditions

2.2.2 Drought Monitoring Indicators

Hydrometric indicators and indices serve as a critical tool for providing early warnings of dry weather and drought development both at a regional and catchment scale. Anglian Water has established a suite of these indicators with data gathered from a range of sources including the Environment Agency, Met Office and UKCEH. For example, UKCEH have created a Water Resources Portal which provides useful visualisations and analysis of indices.

It is important to note that no single metric can independently signal a change in drought status; rather, a combination of indicators must be assessed collectively to provide a reliable forecast. All indicators are evaluated alongside the current resource status to monitor and anticipate the onset of dry weather or drought conditions.

To support this process, Anglian Water has developed an indicative drought management framework (Table 2.2) which sets how indicators are used to guide decision-making for drought management actions. This framework ensures a structured and consistent approach to identifying emerging risks and implementing timely interventions.

The significance of individual indicators varies depending on the time of year. For example, elevated Soil Moisture Deficit (SMD) combined with low rainfall during the autumn period can indicate a delayed start to the aquifer recharge season. If low rainfall persists through winter and spring, this pattern may serve as an early indication of drought conditions. In such cases, Anglian Water undertakes a review of the resource situation and initiates appropriate drought actions as required.

In some circumstances, drought actions–such as increasing the frequency of resource forecasting–may be implemented even before early warning indicator thresholds are reached. This proactive approach is particularly relevant when drought impacts are observed elsewhere in the country, highlighting the need for regional preparedness and resilience.

2.2.2.1 Rainfall

Historical rainfall records are a key component in identifying periods of low precipitation that may precede drought conditions. Anglian Water uses historic rainfall accumulations and extreme value analysis conducted by the Met Office and Atkins to establish return period (RP) drought events for our sub-regions; Ruthamford, Lincolnshire, Trent, Norfolk and Suffolk. These analyses cover RP thresholds of 1 in 5, 1 in 10, 1 in 50, 1 in 100, and 1 in 200 years, providing a robust statistical basis for understanding the likelihood and severity of drought events.

Rainfall data for each Environment Agency hydrological catchment within the region is monitored through rolling accumulations over 1, 6, 12, 24 and 36-month periods. Deviations from the Long-Term Average (LTA) are assessed and compared against Environment Agency classifications. This approach enables the identification of both short-term anomalies and longer-term deficits, such as consecutive dry winters, which can significantly impact resource availability. These rolling accumulations are visualised in accumulation maps, examples of which are included in our monthly Situation Report (Figure 2.2, Figure 2.3 and Figure 2.4). Such maps provide a clear representation of spatial and temporal rainfall patterns, supporting informed decision-making.

Figure 2.2 Rainfall accumulation map showing 1-month catchment % LTA and colour coded by classification

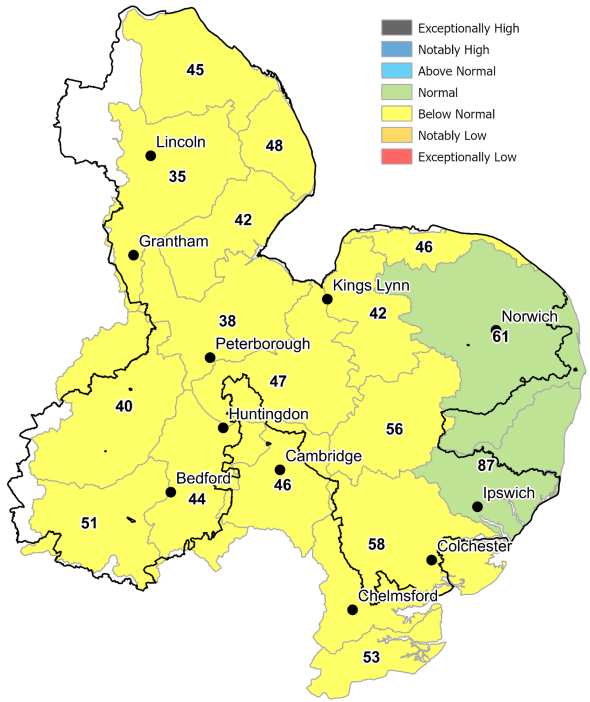


Figure 2.3 Rainfall accumulation map showing 6-month catchment % LTA and colour coded by classification

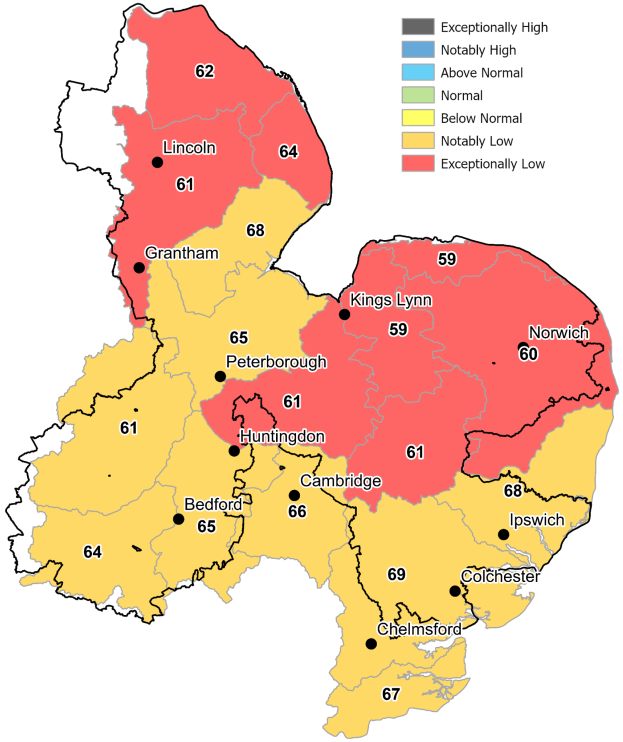
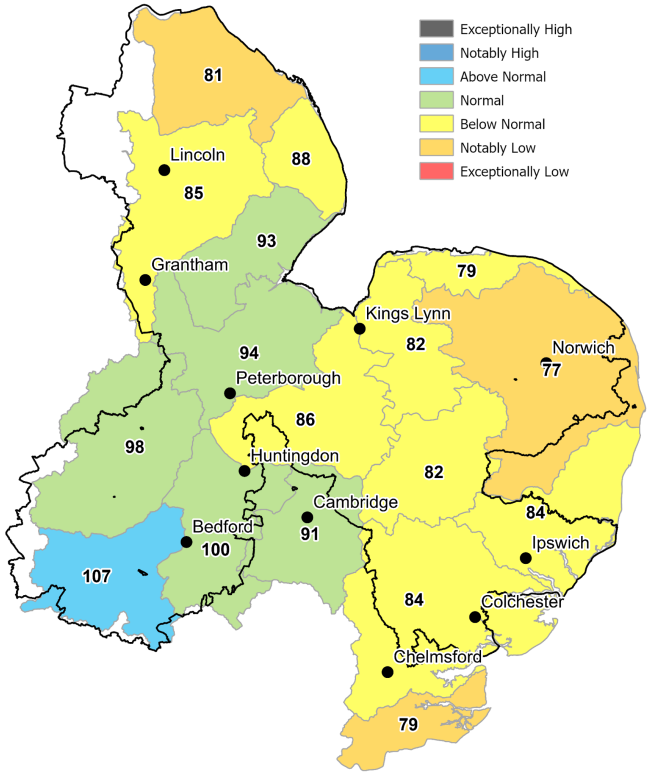


Figure 2.4 Rainfall accumulation map showing 12-month catchment % LTA and colour coded by classification

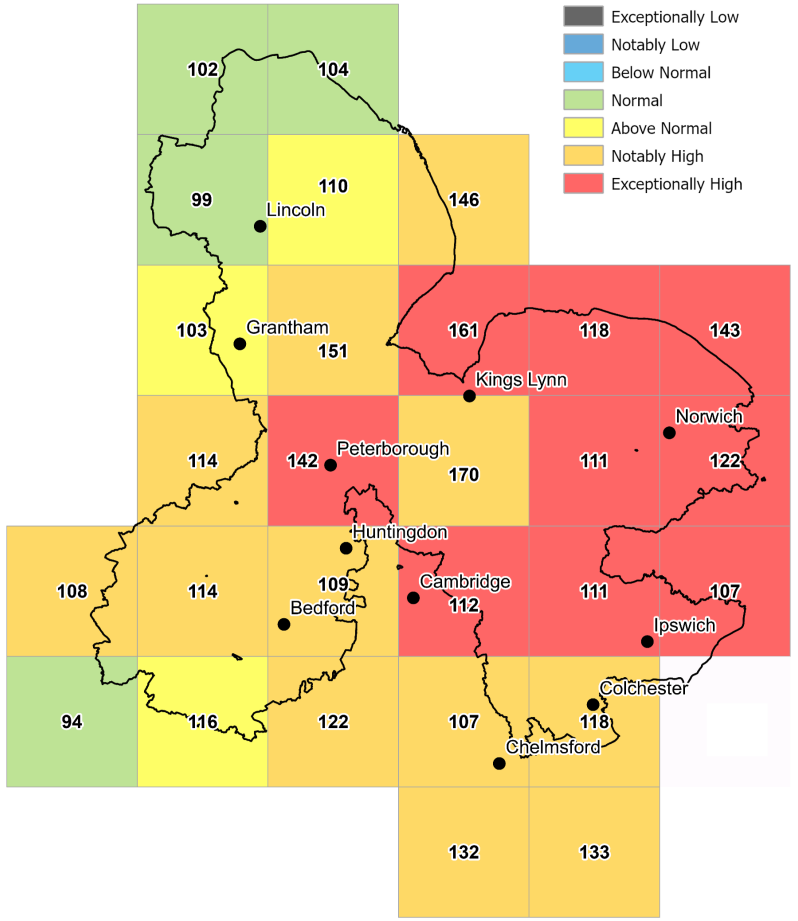


2.2.2.2 Soil Moisture Deficit and Effective Precipitation

Anglian Water closely monitors Soil Moisture Deficit (SMD) across the region, comparing current values against historical seasonal variations to identify potential anomalies. Both regional average SMD and spatial variations are assessed using 40 km MORECS data, providing a detailed understanding of soil moisture conditions (Figure 2.5). A SMD value below 20 mm is generally interpreted as an indication that aquifer recharge is commencing, whereas persistently high SMDs during winter signal a delayed recharge season, which can adversely affect groundwater resources. It is important that each area is reviewed on a case-by-case basis as they will all have different recharge triggers.

To complement SMD analysis, Effective Precipitation (EP) data, received from the Met Office which is also applied to the 40km MORECS grid, is used to determine whether recharge is likely occurring. This combined approach is particularly valuable during the winter months, as it enables early identification of potential resource challenges in the following spring and summer due to insufficient recharge.

Figure 2.5 SMD levels across the region in mm and colour coded by classification



2.2.2.3 Standardised Precipitation Index

The Standardised Precipitation Index (SPI) evaluates precipitation anomalies over varying timescales to identify meteorological drought conditions. It is a key metric used to assess the severity of low rainfall and to determine whether drought conditions may be developing. SPI is calculated across multiple timescales at the catchment level, and we routinely monitor 1-, 6-, 12-, and 24-month values to capture both short-term and long-term precipitation trends. This data is sourced from the UKCEH Water Resources Portal. Table 2.5 provides the classification ranges associated with SPI values (as well as the other indices mentioned in the sections below), which span from extremely wet to extremely dry, following the methodology outlined by McKee et al. (1993)[4].

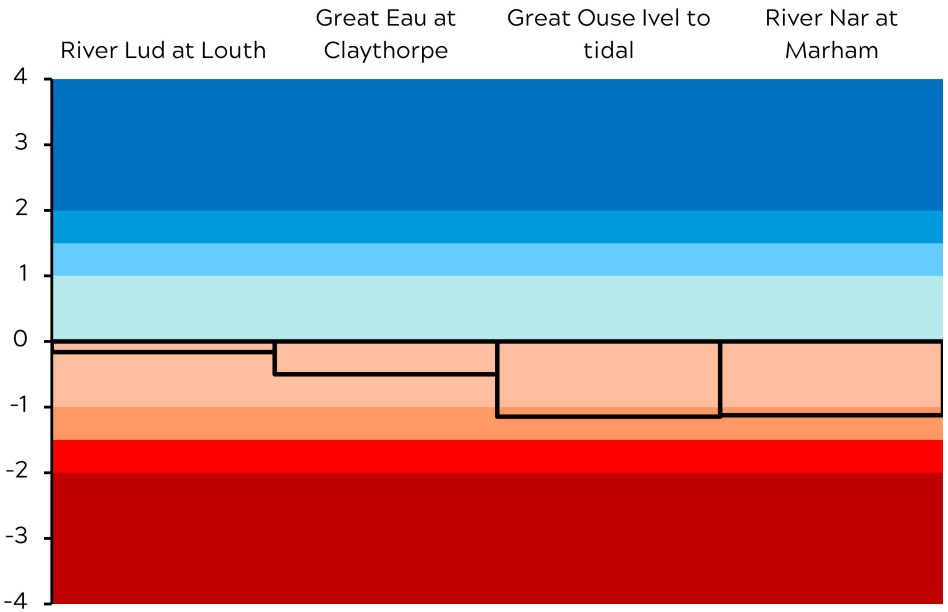
According to the World Meteorological Organisation (WMO) user guide, a drought event is defined as any period during which the SPI remains continuously negative and reaches an intensity of -1.0 or lower. The drought event concludes when the SPI returns to a positive value. The cumulative sum of SPI values across all months within a drought event is referred to as the drought's magnitude. In 2022 many catchments in the Anglian region reached 12-month accumulation SPI values below -1.5 and -2 and it wasn't until midway through 2023 that these accumulations returned to positive values. The WMO guide also provides estimates of drought return periods based on SPI values, which are used to assess the statistical likelihood of recurrence.

To ensure comprehensive monitoring, we track SPI values for 11 UKCEH Station rainfall catchments and 13 Integrated Hydrological Units (IHUs). This approach provides a detailed understanding of current conditions across the region. Where the 12-month catchment SPI falls below the -1.0 threshold, this serves as an indicator for potential dry weather impacts. Figure 2.6 illustrates an example of a 12-month SPI catchment graph used in our reporting.

Table 2.5 SPI, SSI and SGI classifications

Extremely Wet	> 2.0
Severely wet	1.5 to 2.0
Moderately wet	1.0 to 1.5
Mildly wet	0 to 1.0
Mildly dry	-1 to 0
Moderately dry	-1.5 to -1.0
Severely Dry	-2.0 to -1.5
Extremely Dry	< -2.0

Figure 2.6 12-month (Feb 25 - Jan 26) SPI graph used in our Situation Report



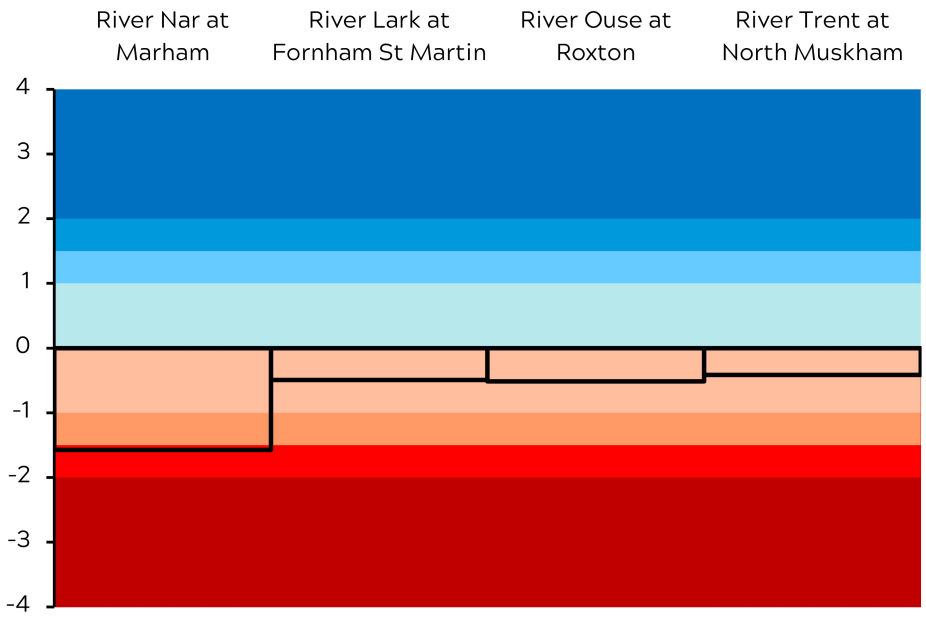
4 McKee et al. (1993) The Relationship of Drought Frequency and Duration to Time Scales

2.2.2.4 Standardised Streamflow Index

The Standardised Streamflow Index (SSI) assesses deviations in river flow from long-term norms, providing insight into hydrological drought impacts. It is an important indicator used to assess the onset and progression of drought conditions. SSI measures monthly normalized anomalies in streamflow and applies the same classification scale as the SPI. Negative SSI values indicate dry anomalies, and potential drought conditions are expected when values remain continuously negative and fall below -1.0 or lower.

Anglian Water monitors SSI values across multiple timescales–1, 6, 12, and 24 months–for ten rivers distributed throughout the region. This data is sourced from the UKCEH Water Resources Portal, ensuring consistency and reliability in monitoring. When current river flow SSI values approach drought thresholds, this serves as an indicator to review the water resources situation.

Figure 2.7 12-month (Feb 25 - Jan 26) SSI graph used in our Situation Report

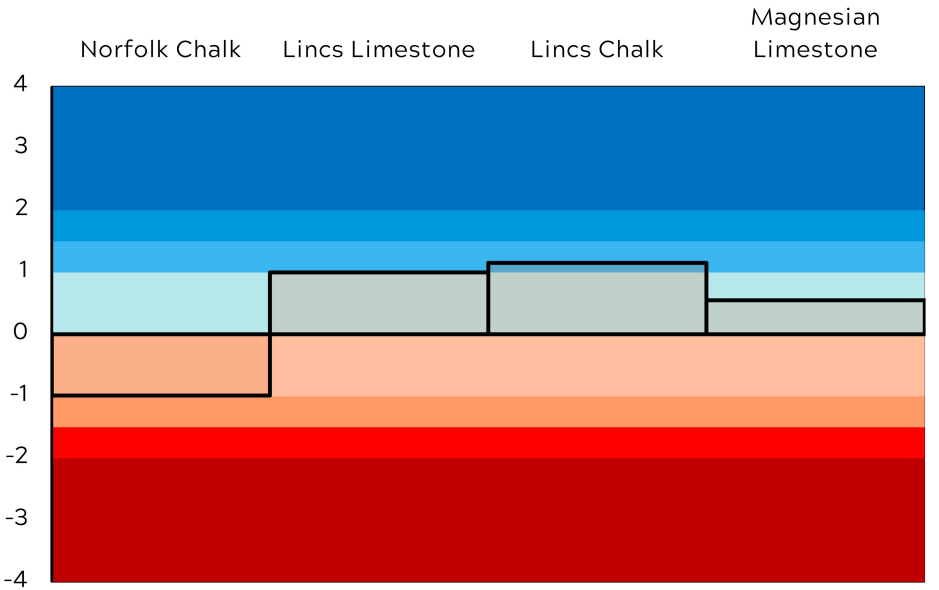


2.2.2.5 Standardised Groundwater Index

The Standardised Groundwater Index (SGI) measures groundwater level anomalies, offering an indication of subsurface resource stress. It was developed as part of the ENDOWS About Drought project in collaboration with the British Geological Survey (BGS) and UKCEH. SGI provides a measure of historical groundwater level records for observation boreholes that meet specific criteria, enabling a standardised assessment of subsurface water conditions.

Within our region, we monitor six boreholes using SGI data. Due to the nature of groundwater level variability, SGI values are classified as one-month accumulations only. The data is sourced from the UKCEH Water Resources Portal and follows the same scale as the SPI and SSI. However, SGI data is updated only every six months, which limits its use as a real-time drought indicator. Instead, SGI serves as an important indicator for understanding aquifer conditions and long-term resource trends rather than initiating immediate reviews of the water resources situation.

Figure 2.8 1-month SGI (Jan 26) graph used in our Situation Report



2.2.3 Abstraction Licence Monitoring and Compliance

Anglian Water undertakes continuous monitoring of daily abstraction data to ensure full legal compliance with abstraction licence conditions and to track the approach of any cessation limits or associated restrictions. The implementation of licence cessation conditions is triggered by formal notification from the Environment Agency, based on hydrometric data collected through their monitoring network. This process ensures that abstraction activities remain within regulatory limits and that environmental integrity is maintained.

2.2.3.1 Abstraction Licence Conditions

River and groundwater abstraction licences can include restrictions to ensure water use remains sustainable and does not compromise the ecological health of rivers, wetlands and aquifers. During prolonged dry weather or drought, river flows or groundwater levels can fall to low levels, reducing habitat availability, degrading water quality, and threatening downstream users. To prevent any environmental impact and maintain resilience in water resources, licences include conditions that limit or suspend abstraction when flows drop below specified thresholds.

Licence conditions cover a range of mechanisms designed to manage water use responsibly during periods of scarcity. Seasonal restrictions are common, for example, allowing a lower Minimum Residual Flow (MRF) during winter months when flows are naturally higher helps reduce pressure on rivers during summer periods. Some abstraction licences include conditions that vary depending on the amount of water taken over a given period, particularly during summer months. For example, certain licences impose weekend restrictions if the volume abstracted during the previous week exceeds a specified threshold.

In drought conditions, cessation clauses may come into effect which can either limit the amount of water that can be extracted within the licence or can stop abstraction until certain conditions are met. These may be dependent on groundwater level readings from observational sources in catchments which are influenced by groundwater or may be dependant either on other river flows within the same catchment, or river flow gauging further upstream.

2.2.3.2 River Support Sources

There are a couple of different ways in which we provide support to watercourses through our operations linked to licence conditions. Some licences include conditions requiring compensation flow releases from reservoirs or storage systems during BAU conditions but also during dry weather drought periods. These releases are designed to maintain minimum river flows downstream when natural flows are insufficient, helping to protect the environment.

To sustain abstraction during periods of resource stress, several of our licences also include clauses requiring the operation of river support schemes to support a catchment that could be impacted by our existing abstraction sites. These river support schemes are designed to augment water levels and flows in sensitive areas and are typically activated during times of dry weather and drought. Historically, Anglian Water operated 16 river support schemes across the region, as detailed in **Table 2.6**. During AMP7 (2020-2025) the total operational support schemes was increased to 29 (**Table 2.7**).

Triggers for operating these schemes are generally specified within licence conditions and are based on river flow thresholds or water quality parameters, as monitored and advised by the Environment Agency. Once activated, these schemes provide targeted support to rivers, marshes, lakes, and ponds using both Public Water Supply (PWS) and non-PWS sources, helping to alleviate ecological stress during critical periods.

Table 2.6 Existing river support sources

River Support Scheme	Source Type	Supported River	Associated Source
Houghton St Giles	Groundwater	River Stiffkey	Houghton St Giles
Cley Hall Farm	Groundwater	Cley Marsh Support	Cley Hall Farm
Bowthorpe (BR)	Groundwater	Marsh support / River Yare	Bowthorpe (BR)
Dunston (Stoke Holy Cross)	Groundwater	River Tas	Dunston (Stoke Holy Cross)
Coldham Hall	Groundwater	River Bure	Coldham Hall
Scole	Groundwater	River Waveney	Scole
Great Yeldham	Groundwater	River Colne	Great Yeldham
Balkerne	Groundwater	River Colne	Balkerne
Aldham and Cooks Mill	Groundwater	River Colne	Aldham and Cooks Mill
Debenham	Groundwater	River Deben	Debenham (also linked with Winston licence)
Barnoldby	Groundwater	Team Gate Drain / Laceby Beck	Barnoldby
Laceby	Groundwater	Laceby Beck	Laceby
Cornard (BR)	Groundwater	Cornard Mere	Cornard (BR)
Tinwell to Stamford Mill Stream	Surface Water	Stamford Mill Stream	Tinwell
Costessey Pit No.2	Surface Water	Taverham Mill Lake	Costessey
Cut-Off Channel	Surface Water	River Wissey	Stoke Ferry

Table 2.7 New AMP7 river support sources

River Support Scheme	Source Type	Supported River	Associated Source
Raydon	Groundwater	River Brett	Raydon
Wilsthorpe	Groundwater	East Glen	Wilsthorpe
Linnet	Groundwater	River Linnet	N/A
Barnoldby	Groundwater	Team Gate Drain / Laceby Beck	Barnoldby
High Oak (Seamere)	Groundwater	Hackford Beck	High Oak
Sleaford DL	Groundwater	River Slea	Sleaford DL
Ixworth	Groundwater	River Sapiston	Ixworth / Sapiston
Sheringham (West Runton)	Groundwater	West Runton Pond	Sheringham (West Runton)
Habrough	Groundwater	New Beck Drain / Skitter Beck	Habrough
Kirmington	Groundwater	Skitter Beck	Kirmington
Badwell Ash	Groundwater	River Stowlangtoft	Badwell Ash
Welton	Groundwater (feed from common raw water main)	Hackthorn Beck	Welton
Birchmoor	Groundwater	Broughton Brook	Birchmoor

2.2.4 Environmental drought monitoring, levels and actions

We monitor the environmental impacts of a drought with guidance from the Environment Agency and Natural England through a number of ways including abstraction licence management, liaison with local teams and stakeholders and drought permit environmental monitoring. Drought permit environmental monitoring is discussed more in **Appendix 6**.

During normal conditions we hold discussions with the Environment Agency to assess the current situation across each hydrological catchment. These discussions increase in frequency as dry weather intensifies. These collaborative reviews provide an opportunity to share observations, validate data, and agree on any precautionary or reactive measures that may be required.

As set out in **Section 2.1**, the Environment Agency takes into account both hydrological thresholds and environmental indicators when deciding the drought status of a specific catchment. Although our drought status is determined from the risk to public water supplies and our sources are often more resilient to dry weather conditions than the wider environment or other users are, we work together to align our approach as much as possible to support and reduce drought impacts.

We have not introduced environmental stress-based levels on our water sources because we believe that the current abstraction licence framework and our existing levels and the associated actions that we implement during BAU, dry weather and drought conditions already support public water supply and environmental resilience effectively. For example, we have a comprehensive BAU demand management strategy with ambitious targets as set out in WRMP24. Continuing to improve our leakage management performance as well as increasing our customer's knowledge and understanding of how water usage is directly related to environmental prosperity is at the heart of Anglian Water's purpose.

We continue to work with regional water resources groups and stakeholders to come up with new and innovative ideas to support other sectors during drought but to also become more drought resilient. We have added a couple of examples of schemes that we implement when they are available below.

Lower Nene Working group

Anglian Water maintains a strong collaborative relationship with the Environment Agency, agricultural users, and non-governmental organizations (NGOs) through active participation in the Lower Nene Working Group. The primary objective of this industry leading group is to effectively manage water resource availability for all users within the Lower Nene during dry weather and drought. Anglian Water's aim each year is to maximise the amount of support that is provided to users downstream of our Rutland Water abstraction point at Wansford on the River Nene. For example, in 2025 we allowed over 875 Ml of water to continue downstream and be abstracted by other users instead of being abstracted to fill Rutland Water. We then work with the Environment Agency to "take back" this water during the winter to aid refill when river flows are higher.

Meetings commence at the start of the spring or summer period depending on the water resources conditions and are held on a weekly basis, with frequency increasing if drought conditions intensify. These sessions provide a forum for sharing data, discussing operational constraints, and agreeing on measures to safeguard public water supply, agricultural and environmental interests. During this period, Anglian Water undertakes a detailed review of surface water conditions at Rutland Water and implements abstraction reductions wherever feasible. This proactive approach ensures that sufficient water is available downstream to support irrigation and maintain ecological health during the key growing season.

By adopting these measures and maintaining transparent communication, Anglian Water continues to strengthen relationships with other water abstractors and the Environment Agency. This collaborative framework not only supports sustainable water management but also reinforces trust and cooperation among stakeholders during periods of resource stress.

Water re-use from groundwater source rehabilitation

A programme of maintenance for groundwater assets including rehabilitation activities are routinely undertaken to restore output to the original design potential. These interventions are essential for maintaining the efficiency and reliability of groundwater sources within our supply network. During the rehabilitation process, water is typically discharged as part of cleaning and redevelopment operations.

This discharged water is generally released to a local river or transported by tanker to a nearby treatment works, in full compliance with Environment Agency guidelines. However, during dry weather and drought conditions, Anglian Water works closely with the Environment Agency and local agricultural users to explore opportunities for beneficial reuse of the discharged water. Where feasible, this water is redirected for irrigation purposes rather than being allowed to run to "waste".

This practice delivers multiple benefits: it supports local abstractors during periods of increased demand, reduces pressure on surface water resources, and contributes positively to environmental sustainability. Such measures are considered standard business practice for all rehabilitation activities and reflect Anglian Water's commitment to responsible water management and stakeholder engagement.

2.3 Drought Levels and Scenario Testing

We have created drought levels for our operational sources as well as observation sources where appropriate. This allows us to identify where sources are deviating from their normal operating levels due to low rainfall so that we can determine the appropriate form of action to maintain the security of supply. All levels have been developed to allow enough time to prepare for and implement the appropriate actions as well realising the benefit from each action.

Not all our sources will respond to dry weather and drought in the same way so the drought levels are specific to the individual reservoir, direct river intake or groundwater source.

Where possible the drought levels applied to each source are in line with the standard water company drought levels set out in Table 2.8. The proposed associated actions for each level are then set out in **Part 3**.

It is important to note that our drought levels and actions are guidelines for when drought levels are determined or actions are to be implemented. Not all our sources in the Anglian region have a drought level assigned to them so we would determine the drought level status of a WRZ by taking into account source levels within the zone but then also using the indicators set out in our drought management framework (Table 2.2). There isn't always a primary source in each WRZ so all sources and indicators are taken into account before making a decision on drought levels and actions.

If the potential risk to public water supplies is likely to be realised earlier than the levels noted on our water sources, then we reserve the right to change our drought status and implement actions proactively.

Table 2.8 Environment Agency drought stages and water company drought levels

Drought stages	Drought levels
Normal (green)	Business as Usual (BAU)
Prolonged dry weather (yellow)	1
Drought (amber)	2
	3a
Severe drought (red)	3b
	4

2.3.1 Reservoir Drought Levels

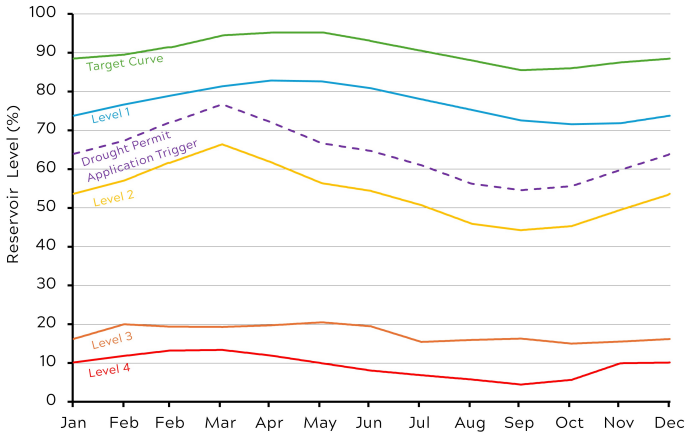
We have defined drought levels for each of our reservoirs, which act as a reference against which we can track changes in reservoir storage. The reservoirs also include a target level and drought permit application trigger levels where appropriate (Figure 2.9).

Continuous monitoring records the storage levels at each of our operational reservoirs and the data are collated to provide a continuous profile of historical storage levels. Understanding the potential onset of dry weather or drought is achieved by assessing the current storage relative to the target level expected for that time of year. Where reservoir storage sees a continued decline due to low rainfall and subsequent low inflows, this is evidence that our supplies may be affected by drought.

We are currently investigating the use of drought levels in a more conjunctive system aided by the increased connectivity that our strategic interconnectors will bring in future years. We have considered it appropriate to maintain these curves for the WRMP24 and Drought Plan 2027 at this stage.

Further information on the reservoirs including details of the methodology used to produce the levels is provided in **Appendix 3**.

Figure 2.9 Example of reservoir target and drought levels



2.3.1.1 Target level

The target level is an optimum storage 'target' to ensure security of water supply should the reservoir experience a drought equivalent to its reference drought. The target levels are set to also aim to avoid overfilling the reservoirs.

We do not expect our reservoirs to always be on target, various factors can affect the ability for the reservoir to be at this level. Maintenance on our abstraction systems, raw water quality and supply network changes are the key operational influences which affect the level in our reservoirs. These are planned in when possible, with the aim to reduce the overall impact on the reservoir.

2.3.1.2 Drought levels

For each pumped storage reservoir there are four drought levels which have been developed to enable effective and timely responses to the onset of dry weather or drought conditions:

- Level 1
- Level 2
- Level 3
- Level 4

The natural inflow reservoirs (Hollowell and Ravensthorpe) have only three drought levels - Level 1 was not derived for these reservoirs due to their reactive nature and relatively small contribution to the Ruthamford system.

2.3.1.3 Drought permit application trigger level

Alongside the drought levels we have created a 'drought permit application trigger' to provide an indication of when we may need to prepare and apply for a drought permit. This trigger is set at approximately 60-days before a permit might need to be in place. The level should provide sufficient time for us to complete the necessary permit application process using application ready documentation. However, depending on the situation we may choose to prepare and implement actions such as drought permits ahead of crossing the suggested levels. The decision to apply for any permits will be made by the Drought Management Team on behalf of the Anglian Water Board, on review of the time of year, and wider resource and environmental situation.

2.3.1.4 Drought vulnerability and scenario testing

In the Drought Plan a selection of previous droughts have been used to test drought vulnerability and demonstrate how our sources might react, the drought levels that are crossed and potential actions that might be required. The scenarios tested are summarised in Table 2.9 and are shown in more detail in **Appendix 3** The reference drought refers to the 1 in 200-year drought set by the WRMP24 to test the full Anglian Water system resilience and the drought vulnerability refers to the type of drought that each reservoir could be impacted by:

- Short - typically single-season droughts
- Medium - typically extended single-season droughts
- Long - typically drought lasting two to three years

Stochastic simulation methods, where realistic rainfall totals are drawn at random from a probability distribution, have become an established way for water companies to create a large set of rainfall inputs for hydrological models. This data allows testing beyond the observed record i.e. 1 in 200-year and 1 in 500-year drought events. For WRMP24, to test the full system resilience we carefully selected a single reference drought event for each return period including 1 in 500-year drought events, based on the outputs of the Atkins and Met Office Weather Generators to ensure regional coherence when simulating the impacts of these droughts. These reference droughts inherently include a mixture of short, medium and long term events as well as events that would be high intensity. Outage testing, including an element of water quality impact, is also included within WRMP24 scenario testing. We are working on improving outage and water quality testing for WRMP29. The full details of the technical methods and scenario testing used to assess the drought vulnerability of our water resources can be found in the **WRMP24 Supply Forecast Report**.

Table 2.9 Reservoir drought scenarios and associated vulnerability

Reservoirs	Short drought	Medium drought	Long drought	Reference drought	Drought Vulnerability
Alton	1921-23	1900-03	1972-75	1975-77	Medium
Ardleigh	1921	1989-91	1932-35	1975-77	Short*
Covenham	1921-22	1989-92	1973-77	1975-77	Long
Grafham	1921-22	1975-76	1933-35	1975-77	Long
Rutland	1922	1975-76	1933-35	1975-77	Long
Pitsford	2011-12	1975-76	1933-35	1975-77	Medium
Ravensthorpe and Hollowell	2011-12	1975-76	1933-35	1975-77	Short

* This is a reflection of Ardleigh's small size but due to its large catchment it recovers quickly.

2.3.2 Direct river intake drought levels

Direct river abstractions rely on river flows and have no associated seasonal storage in the form of reservoirs. These sources react quickly to changes in rainfall and are more vulnerable to other influences such as outages due to water quality. To protect the environment, our river intakes have a licence condition that specifies a Minimum Residual Flow (MRF) or Hands off Flow (HoF), below which we are not authorised to abstract water. During periods of low flows, we liaise closely with the Environment Agency and monitor flow or level conditions associated with the licences at each of our direct river intakes.

To ensure the output of our direct intakes remains secure against a range of drought events we have developed a range of drought levels. We have applied these drought levels to just the direct river intakes that already have drought permit options assigned to them (Figure 2.10). The levels and general methodologies are summarised below but as each river intakes are different some of the levels have been developed using alternative methods. Further information on the drought level creation and some scenario testing examples are included in **Appendix 3**. As mentioned in **Section 2.3.1.4** scenario testing against the full range of drought return periods and types of drought at the system level has been completed for WRMP24 (**WRMP24 Supply Forecast Report**).

As our direct river intakes only contribute approximately ten percent to our overall supply and sit within complex conjunctive systems it is important to note that the levels created are indicative and are not designed to directly result in specific drought actions or restrictions at the respective levels. Due to the aforementioned reasons, we also haven't included Level 3 and Level 4 curves at these direct river intake sites. The full suite of drought levels and associated appropriate actions that are required in each WRZ will be determined by taking into account the status of all sources, any operational pressures acting in the area and the indicators included in the drought management framework (Table 2.2).

2.3.2.1 Levels 1 and 2

Used as an indicator for when the implementation of actions associated to each level may need to be considered. These levels were developed using return-period analysis of drought events as well as operational feedback gathered during drought events.

2.3.2.2 Pre-drought permit application trigger level

Used as an indicator to check the latest river flows and forecasts. If forecasts suggest a potential risk, then drought permit application documentation can start to be reviewed. This level has been developed using the same analysis carried out for the drought permit application trigger level but instead is crossed on a more regular occurrence.

2.3.2.3 Drought permit application trigger level

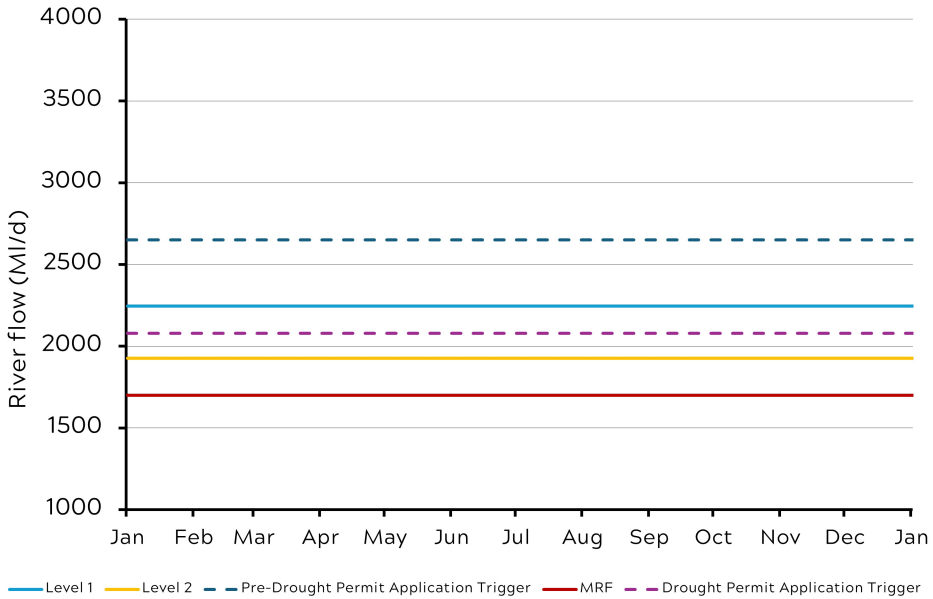
Used as an indicator for when we may need to prepare and apply for a drought permit. Calculated using the river flow observed 60 days before a potential MRF/HoF crossing which is when the permit may be required. The level should provide sufficient time for us to complete the necessary permit application process using application ready documentation. However, depending on the situation we may choose to prepare and implement actions such as drought permits ahead of crossing the suggested levels.

The levels that have been set for the key direct river intakes are summarised in Table 2.10.

Table 2.10 Key direct river intake drought levels

Drought Levels	River Trent at Hall (Ml/d)	River Wensum at Heigham (Ml/d)	River Wissey at Stoke Ferry (Ml/d)
Pre-drought permit application trigger	2650	175	82
Level 1	2245	136	73
Drought permit application trigger	2079	104	45
Level 2	1927	80	32

Figure 2.10 Example of drought levels for direct river intakes



2.3.3 Groundwater drought levels

Across the Anglian Water region there are approximately 200 groundwater abstraction sources comprising of around 400 operational boreholes. The boreholes range in depth from 10m to 500m and abstract from a variety of aquifers, including; chalk, limestone, sand & gravel and sandstone. Due to the varied geological setting and location of the abstractions there is a large variance in the vulnerability drought poses to our groundwater sources. With some sources expected to experience drought related impacts and others not considered to be drought vulnerable.

All Anglian Water groundwater sources are continuously monitored and regularly reviewed for indications of any changes in key parameters. Where groundwater levels begin to decline in combination with early warning indicators described in the drought management framework (Table 2.2) this monitoring is increased and depending on the conditions, drought actions may be undertaken. In addition to monitoring our pumped groundwater sources, non-pumped sources are also monitored to provide a regional indication of aquifer levels. Groundwater levels in pumped sources are a combination of regional groundwater levels and hydraulic performance of the source, therefore monitoring of groundwater levels in pumped sources, alone, is not an accurate reflection of the aquifer's drought level.

Due to the water level in a production sources being influenced by both the pumping and regional aquifer levels it is hard to definitively identify drought levels within pumped sources. The ability to directly link observation source drought levels to known impacts at pumped groundwater sources is intrinsically difficult requiring theoretical assessments in the form of the aquifer summary diagrams, as described in **Section 2.3.3.1**. Furthermore, the relationship between Rest and Pumped Water Levels (RWL/PWL) within a pumped source is dynamic and can be impacted by a number of factors including general source condition in addition to aquifer levels. Due to the variability in pumped water level as a result of abstraction rates the drought levels associated with the observation sources are indicative and used as guidelines to determine actions only. Figure 2.11 demonstrates conceptually how the observation source levels relate in an idealised fashion to a pumped groundwater source.

Figure 2.11 Groundwater Observation and Production Source Links

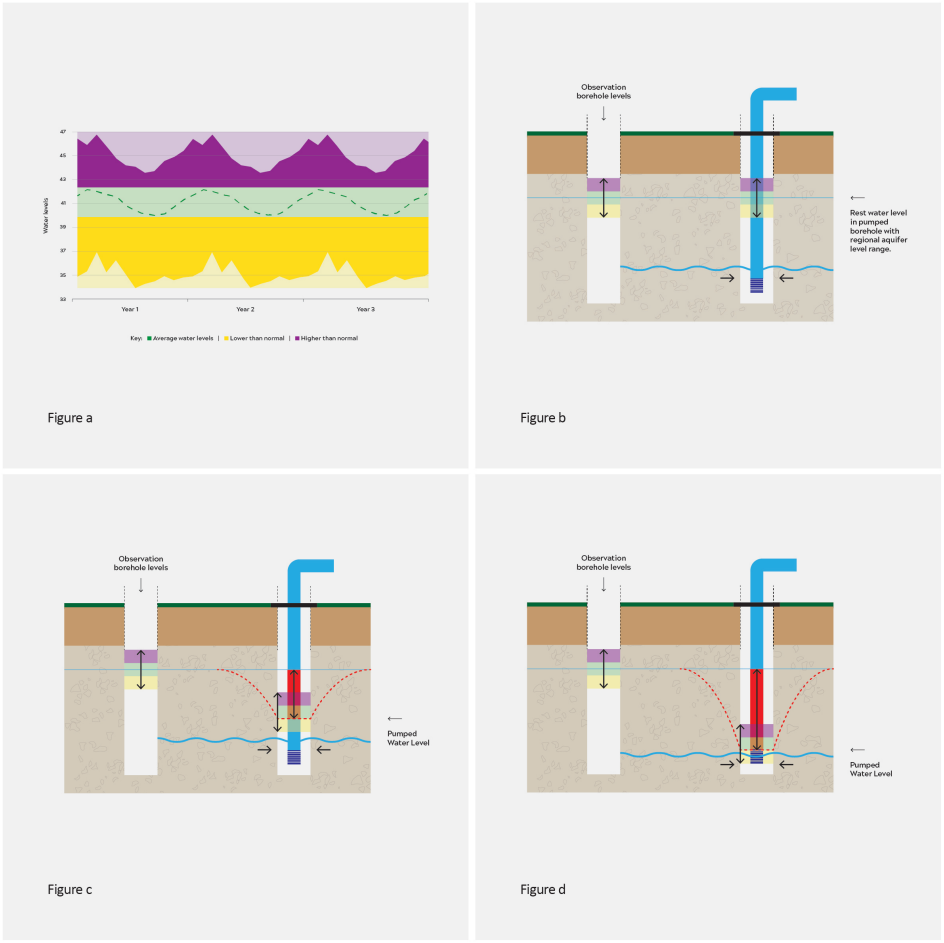


Figure a: Groundwater observation source hydrograph, average water levels (green), above average (purple) and below average including drought levels (yellow).

Figure b: Good correlation of groundwater levels between observation and pumped sources. Observation source is representative of the hydrogeological conditions of the catchment.

Figure c: Observation source is not influenced by pumping. The supply source levels, when pumping in drought conditions (yellow), are likely to be maintained above the pump or key inflow horizons. Therefore, the source in this scenario is not drought vulnerable.

Figure d: Observation source is not influenced by pumping. The supply source shows during drought conditions it is possible the water level may drop below key flow horizons meaning yield will be restricted to keep the level above this. Therefore, in this scenario the source would be drought vulnerable.

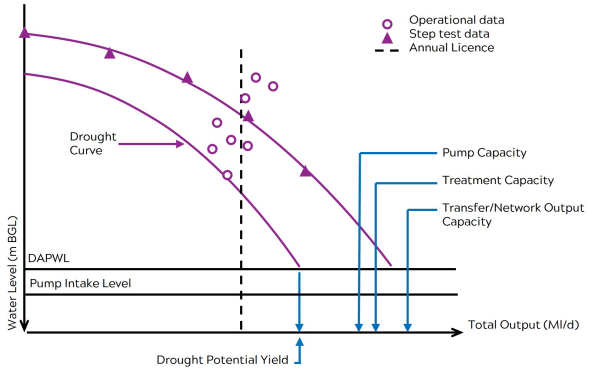
2.3.3.1 Assessing drought vulnerability

The potential yield for each of our groundwater sources is calculated in accordance with the industry-accepted UKWIR methodology[5]. This is calculated for both the worst historic drought experienced, and a 1 in 500-year event (extreme drought), in line with the level of supply resilience tested in WRMP24.

As a period of drought progresses, there is an increasing potential for yields from groundwater sources to reduce, as operational pumping levels approach or breach the Deepest Advisable Pumped Water Level (DAPWL) (Figure 2.12). The DAPWL may be set according to interpretation of a combination of source log, geophysical, or observational pumping and water level response data. Typically, the DAPWL is set at the level of a critical feature, such as a major inflow horizon, which if it were to become dewatered would be expected to reduce the yield in an unpredictable way.

5 UK Water Industry Research (1995) A methodology for the determination of outputs for groundwater sources

Figure 2.12 Methodology for assessing groundwater yields. Reproduced based on UKWIR guidance



2.3.3.2 Drought vulnerable groundwater sources

We have reviewed our classification methodology and have revised the tier criteria to both more acutely reflect the sources that are more likely to have a yield impact that affects water supply at the upper end, and more broadly include all sources with a yield impact at the 1 in 500-year drought level in WRMP24. As a result, we have four classification tiers in Drought Plan 2027, summarised in Table 2.11.

Due to the redefined classifications, the differences in the number of sources in each tier does not reflect a material change to the vulnerability to drought. Notably, Tier 1 now more accurately reflects those sources where drought impact is expected to be 'felt' by the inclusion of a source utilisation criteria. Tier 2 includes all sources where a drought would be expected to prevent us being able to abstract to either the annual or the peak licence volume. Tier 3 and Tier 4 are for sources with an expected yield impact in an extreme, 1 in 500-year drought. For Tier 3 sources, an extreme drought is expected to prevent full utilisation of the licenced quantity, whereas for Tier 4 sources the licenced quantity should still be achievable but there is a reduction to the theoretical yield from the source. Drought Plan 2022 didn't include Tier 4 sources.

Table 2.11 Drought Plan 2027 drought vulnerability tiers and comparison with Drought Plan 2022

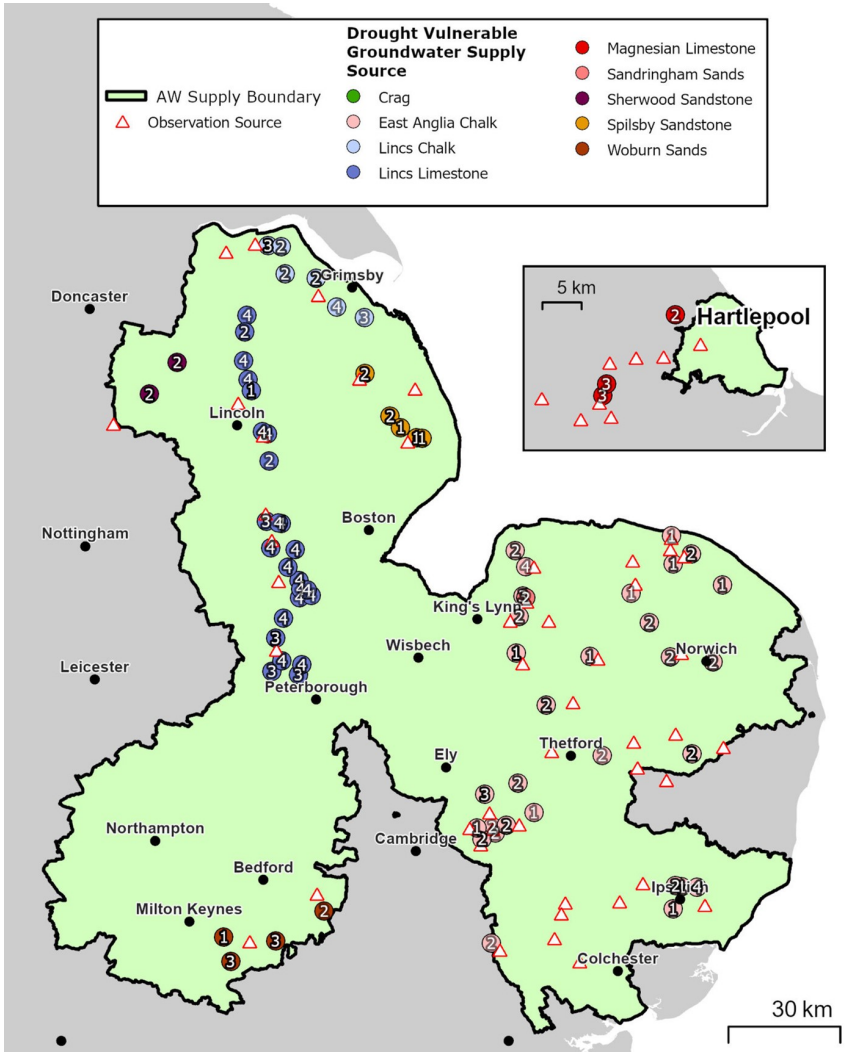
Tier	Drought Plan 2022 drought vulnerable sources		Drought Plan 2027 drought vulnerable sources	
	Source count	Description	Source count	Description
T1	17	Drought impact on yield and supply	15	Drought reduces potential yield to < maximum of the average annual utilisation in last 5 years (+20%), capped to annual licenced volume
T2	9	Drought impact on yield but licence limits supply impact	30	Drought impact on ability to meet either average or daily licence
T3	20	Uncertain severe drought risk or risk is for droughts >1 in 200-year severity	14	Extreme drought (1 in 500-year) impact on ability to achieve licenced abstraction
T4	-	-	21	Extreme drought reduction in potential yield

2.3.3.3 Groundwater drought levels

The Environment Agency has a network of observation sources that are used to monitor regional groundwater levels across various aquifer units. The network is supplemented by observation sources monitored by Anglian Water. Groundwater drought levels have been developed to replace the existing levels created for Drought Plan 2022 for the majority of observation sources. The observation sources that these levels have been created for have been selected due to their proximity to our drought vulnerable sources, whilst ensuring they are not affected by the operation of nearby supply sources, together with the length of record and frequency of their data. During 2020 - 2023 our observation source monitoring network has expanded in response to hot spot dry weather and drought areas. We are looking to further to expand our network of observation sources, to not only increase coverage near our drought vulnerable sources but to also include all aquifer units in our region. We are continuously reviewing the representativeness of the observation sources to establish good correlation between the pumping and observation sources.

Figure 2.13 shows all the observation sources that we currently monitor and the drought vulnerable tiered sources. For more information on how the observation sources match up to all our supply sources please see **Appendix 3**.

Figure 2.13 Observation sources and drought vulnerable supply sources. Numbers within the sources refer to the drought vulnerability tier



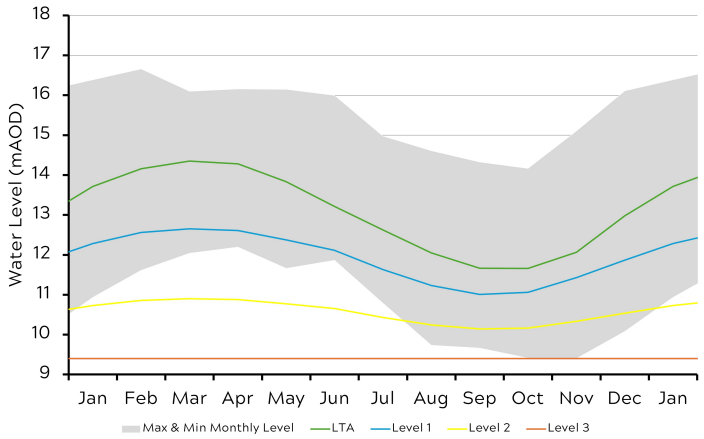
Depending on the nature of a drought event, drought vulnerable sources can potentially be the first to be impacted. The impact will often manifest as gradual reduced ability to yield normal quantities of water, which leads to a difficulty in directly correlating set specific action levels for groundwater sources using observation sources alone. Therefore, groundwater drought levels are treated as indicative in comparison with other hydrometric and climatic data and forecasts at the time. The aim of the drought levels are to provide an indication of the potential onset of a drought and the developing severity of it. Commonly groundwater droughts especially in chalk aquifers develop over a longer period of time compared to surface water droughts. A groundwater drought is typically preceded by a dry or multiple dry winters leading to a deficit in groundwater recharge.

Our groundwater drought levels (**Figure 2.14**) have been calculated as a deviation between the Long Term Average (LTA) and historic observed minimum levels at the observation sources.

- **Level 1**: 35%* of monthly LTA to historic minimum
- **Level 2**: 70%* of Monthly LTA to historic minimum
- **Level 3**: Lowest ever recorded groundwater level.

**Initial set levels at individual sources, %'s may change following refinement and calibration against historic or future drought events.*

Figure 2.14 Example of indicative drought levels for groundwater sources



In addition to the drought levels the following criteria identified in **Table 2.12** can be considered during decision making to determine whether the wider WRZ should be designated as being at that corresponding drought level. Further consideration should be made in WRZs that are fed from conjunctive use of surface water and groundwater as the drought levels may be different for each raw water source.

Table 2.12 Drought level decision support matrix

Primary criteria	Secondary criteria	Drought level consideration
• Drought Level 1 exceeded for 3 consecutive months • Conjunctive sources or neighbouring aquifer units showing the same trends	• Outside or towards end of recharge period • Forecast suggests groundwater levels will continue falling • Some possible minor operational impacts	Consider moving WRZ to drought level 1 status
• Drought Level 2 exceeded for 3 consecutive months • Conjunctive sources or neighbouring aquifer units showing the same trends	• Outside or towards end of recharge period • Forecast suggests groundwater levels will continue falling • Operational sources approaching DAPWLs with, probable minor operational impacts	Consider moving WRZ to drought level 2 status
• Drought Level 3 exceeded for 3 consecutive months. • Conjunctive sources or neighbouring aquifer units showing the same trends	• Outside or towards end of recharge period • Groundwater levels forecast to continue to fall • Operational impacts likely	Consider moving WRZ to drought level 3 status

For each observation source the drought levels have been assessed by examining previous drought scenarios when the levels would have been crossed and reviewing drought actions that were taken at the time, to determine whether they will be appropriate within the new framework. In the Drought Plan example drought periods have been chosen to assess against the drought levels include a long duration drought (such as 1988-1994) and short-term high intensity droughts (such as 2011-12 or 2022). This drought scenario testing was applied to all the observation sources to assess the appropriate placement of the Level 1 and 2 curves with respect to historic droughts. Scenario testing against the full range of drought return periods and types of drought at the system level has been completed for WRMP24 (**WRMP24 Supply Forecast Report**).

It is important to note due to the complex nature of groundwater systems and our conjunctive distribution systems, these drought levels are indicative and not designed to directly result in specific drought actions or restrictions at the respective levels. Due to the aforementioned reasons, we also haven't included Level 4 curves at these groundwater observation sites. The full suite of drought levels and associated appropriate actions that are required in each WRZ will be determined by taking into account the status of all sources, any operational pressures acting in the area and the indicators included in the drought management framework (Table 2.2). We will continually review the use of these levels to ensure that they are indicative of drought actions being taken in the future.

Further information on how the drought levels were derived, calibrated and tested against historic droughts is included in **Appendix 3**.

2.3.4 Drought recovery indicators

We determine the end of a drought to be when our water resources have returned to what would be considered 'normal' for the time of year. We use multiple indicators to help us gauge when we have reached this point, the key ones being:

- Reservoirs have returned to their target levels
- Groundwater levels are classified to be at the LTA or within the normal range
- River flows have returned to a normal classification
- Elimination of an accumulated rainfall and SMD deficit
- SSI, SPI and SGI return to normal classifications

In some cases, a return to BAU status can be difficult to determine and could be confused with a short respite in a prolonged drought sequence. We will use our drought forecasting tools as well as expert judgement when other risk such as water quality may hinder further recharge to support with making decisions on when to return our regional or WRZ drought level classification to an improved drought level e.g. moving from drought level 1 to BAU.

The overall return to an improved drought level status will be determined by the analysis of multiple indicators, with only recovery of all or the majority of sources signifying the ability to improve the drought level status or signify an end to the drought.

2.4 Drought Forecasting

To assess the impact of prolonged dry weather and drought on the security of our water supplies, we undertake drought forecasting. The timing and frequency of these forecasts are determined by the progression and severity of the drought, ensuring that our response remains proportionate and adaptive. To support this process, we have developed a structured framework (Table 2.13), which outlines suggested forecasting actions against the different drought levels. This framework is to be used as a guideline. As such, forecasts and requests may be more frequent or infrequent than shown.

During extended periods of dry weather, the Environment Agency and the National Drought Group (NDG) may request a Prospects Report. This report consolidates current resource status and provides forecasts of what the future drought level status could be under a range of rainfall scenarios. It also summarises the actions that may need to be taken as the forecasted water resources situation develops such as customer communications and supply-side interventions, offering a comprehensive view of our operational position and planned measures.

We complete forecasts at a variety of different catchment scales. However, to maximise the effectiveness of the Prospect Report outputs whilst still making the creation process as efficient as possible we have split up our region into five areas - Lincolnshire, Ruthamford, East North, East South and Hartlepool (Figure 2.15).

We continue to enhance and look for innovative new ways to advance our forecasting capability. For example, we have incorporated seasonal weather forecasts into our monthly forecasting system using data from the European Centre for Medium-Range Weather Forecasts (ECMWF). This is used to generate three-month projections of total rainfall and mean temperature on a daily timestep, which are converted into HadUK rainfall and potential evapotranspiration (PET) inputs for the GR6J and GR10J rainfall-runoff models and AquiMod2 groundwater models. This process produces simulated flows that can be assessed against historical time series or run through water resource simulation models under current operational constraints, such as during a dry period. By assessing these forecasts against current reservoir storage, direct river intake and groundwater levels we can better understand future resource positions.

Figure 2.15 WRZs split by areas used for regional water resources forecasting

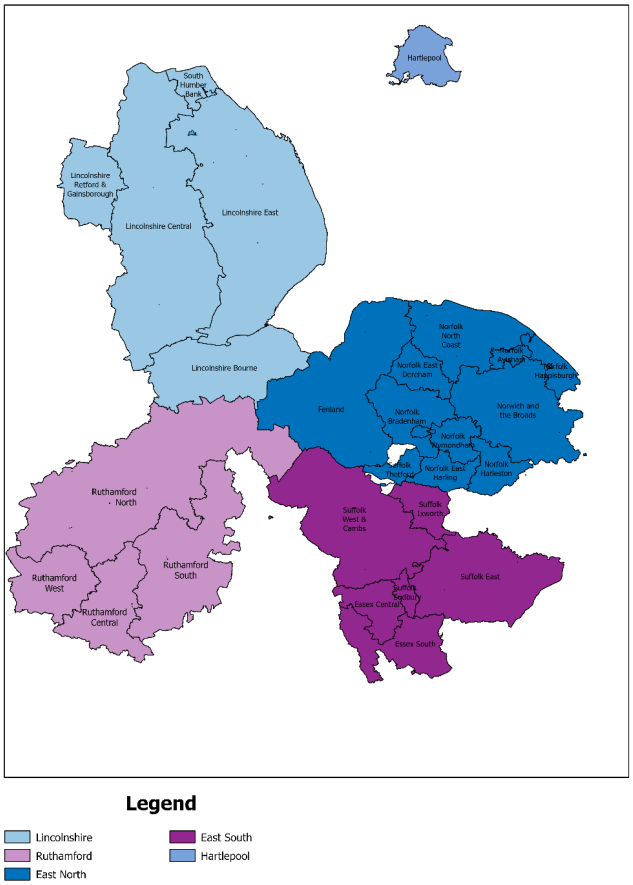


Table 2.13 Drought forecasting framework

Drought Level	Business As Usual (BAU)		Level 1	Levels 2 - 4
Reservoirs	Baseline forecasting. 6-month projects completed for internal and external Spring and Autumn outlook reports.	Commence 3-monthly projections of reservoir storage in MISER using GR6J scenario-based forecasts. Complete any additional internal or external forecasting requests (e.g. Environment Agency Prospects).	Increase to monthly projections of all at risks sites.	Enhanced frequency of resource projections to allow further decision making (often requested by DMT).
Direct River Intakes		Commence 3-monthly projections of river flows using GR6J scenario-based forecasts. Complete any additional internal or external forecasting requests (e.g. Environment Agency Prospects).		
Groundwater		Commence 3-monthly projections of groundwater levels in AquiMod2 using ECMWF rainfall and PET forecasts. Complete any additional internal or external forecasting requests (e.g. Environment Agency Prospects).		

2.4.1 Drought Indicator Forecasting

2.4.1.1 Rainfall

Rainfall forecasts are produced using the ECMWF 3-month rainfall and PET outlook. Forecast data is aggregated by grouping MORECS squares into sub-regions - Lincolnshire, Ruthamford, East North, East South and Hartlepool to provide localised projections of upcoming conditions. These forecasts are instrumental in predicting when drought actions may need to be implemented, particularly during transitional periods between seasons.

2.4.1.2 SMD & EP

SMD and EP forecasts are also produced using the ECMWF and PET data. These forecasts are updated monthly for the 40 km MORECS grid and provide a short-term projection of soil moisture and precipitation conditions. This forecasting capability is especially critical during the spring and autumn periods, as it helps predict the timing of the start and end of the recharge season for groundwater sources. In addition, the EP outputs provide insight into the volume of effective rainfall each part of the region is likely to receive, helping to identify areas where groundwater recovery may be stronger or weaker than average. Figure 2.16 and Figure 2.17 show example outputs of the 3-month SMD forecast and EP forecast which can be generated from the ECWMF rainfall and PET forecasts respectively.

Figure 2.16 Example 3-month SMD forecast for MORECS grid square 120

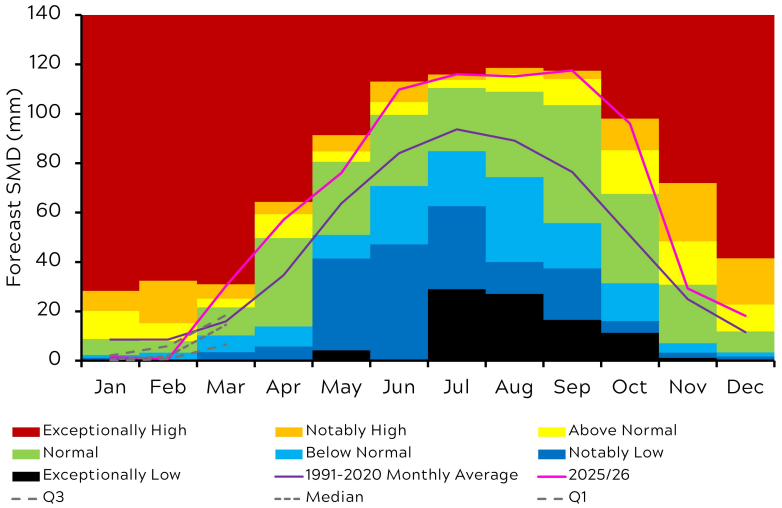
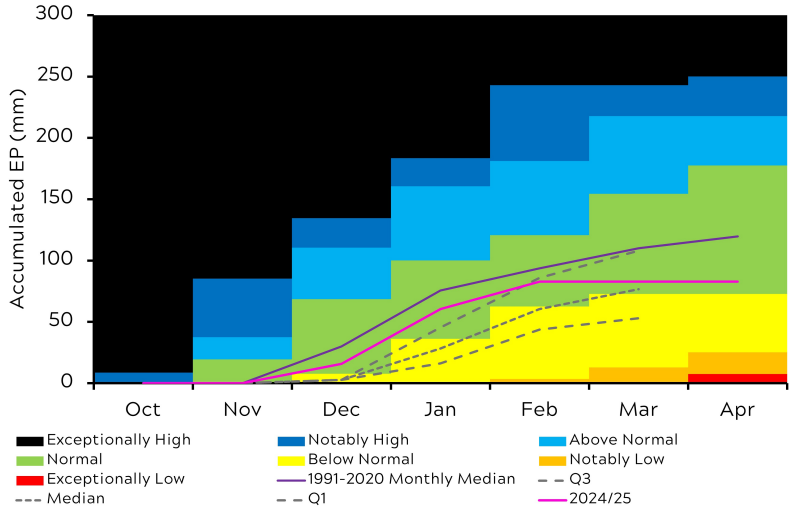


Figure 2.17 Example 3-month EP accumulation forecast for MORECS grid square 120



2.4.2 Reservoir drought forecasting

We evaluate the potential impacts of drought by comparing current and forecasted reservoir storage against the target levels expected for the relevant time of year. This approach enables us to identify emerging risks and implement proportionate actions. Forecasting future reservoir levels is a critical component of our drought management strategy, as it provides early insight into possible supply deficits and informs timely operational decisions.

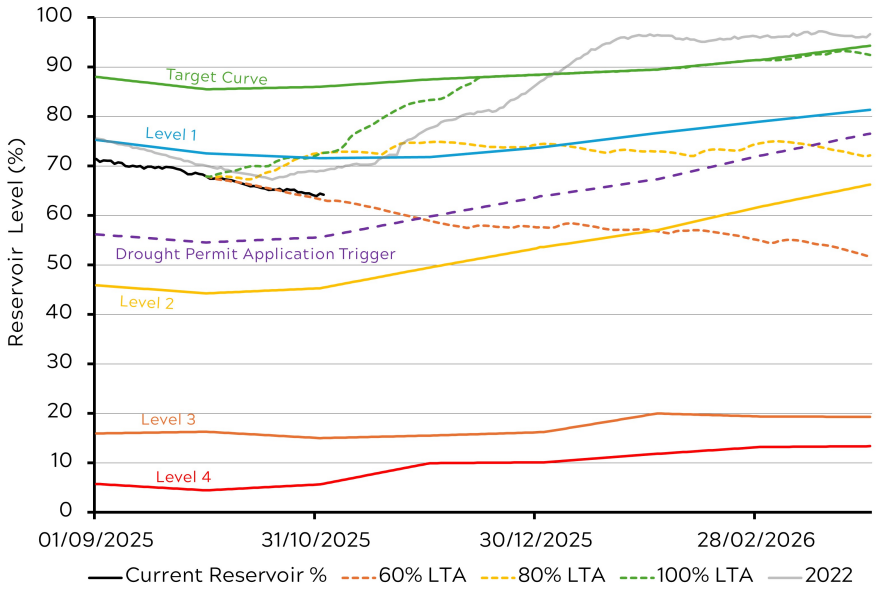
During periods of sustained rainfall deficit, reservoir projections are routinely undertaken to support the DMT. These projections form part of our decision-making framework, guiding assessments of future drought risk and determining the actions required to maintain supply resilience.

To undertake these assessments, we utilise our integrated water resource system model (MISER), which simulates reservoir storage under a range of river flow and rainfall scenarios. The modelling incorporates key operational constraints, including abstraction pumping limits, licence conditions, current demand profiles, and planned asset outages. This ensures that projections reflect realistic system behaviour and operational limitations.

To generate these reservoir forecasts, we have worked closely with Mott MacDonald to develop a suite of scenario based GR6J ensemble river flow and rainfall forecasts informed by varying long term average (LTA) rainfall conditions (e.g. 40%, 60%, 80%, and 100% LTA). These ensembles enable us to project future reservoir positions under contrasting rainfall regimes, providing a clear view of how storage might evolve in different rainfall scenarios (**Figure 2.18**).

By applying lower rainfall scenarios, we effectively stress-test the system, enabling us to forecast a range of potential futures and evaluate the robustness of our supply position under adverse conditions. These outputs provide a comprehensive view of storage trajectories and underpin strategic decisions to safeguard water resources across our supply areas.

Figure 2.18 Example reservoir forecast at 60%, 80%, and 100% LTA rainfall scenarios for Rutland Water

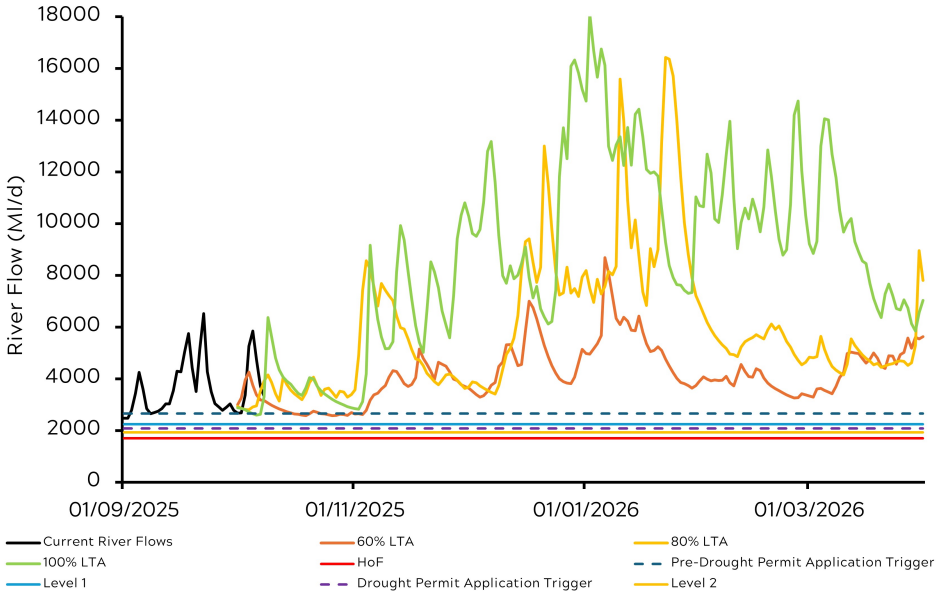


2.4.3 Direct river intake drought forecasting

We forecast direct surface water intake flows using the same scenario based GR6J LTA ensemble method used in our reservoir modelling. In addition to these scenario-based forecasts, we also use the 3-month outlooks produced by the ECMWF, which provide the most up to date understanding of future flow conditions as they are driven by observed meteorological data rather than the historic, synthetic rainfall scenarios used by the GR6J model.

A key metric within this process is abstraction potential, defined as the volume of water available above the prescribed Minimum Residual Flow (MRF) or Hands-Off Flow (HoF) thresholds and within licensed abstraction limits. This indicator is used to assess the viability of continued abstraction under forecast conditions. The outputs are benchmarked against historic river flow for each intake location, enabling us to identify potential risks and determine whether intervention may be required. See Figure 2.19 for an example of our direct intake forecasts.

Figure 2.19 Example direct intake forecast at 60%, 80% and 100% LTA rainfall scenarios for the River Trent



2.4.4 Groundwater drought forecasting

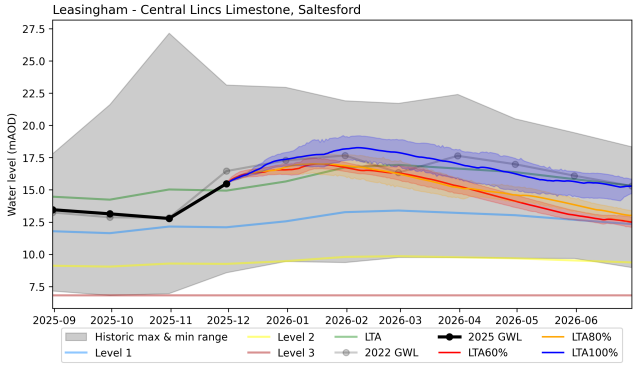
Groundwater forecasting is conducted using AquiMod2, a lumped-catchment model developed by the British Geological Survey (BGS).

AquiMod2 is designed to simulate groundwater level time series up to 24-months using rainfall and potential evapotranspiration (PET) inputs. The rainfall and potential evapotranspiration (PET) inputs into AquiMod2 can be either:

- The 3-month ECMWF rainfall and PET ensembles, or
- LTA rainfall and PET scenarios (5 ensembles for each LTA) generated from historic records for 40km^2 MORECS grid squares. Bias correction has been applied to the MORECS 40km^2 PET. It has been detrended using the Environment Agency Python library.

We have developed and calibrated a suite of AquiMod2 models for 19 key observation groundwater sources across the region. This allows us to gain insights into the future position of aquifers within our region and to implement drought actions in a timely and proportionate manner. For groundwater sources where a calibrated model is not yet available, we continue to rely on detailed tracking of observed water levels against their historic records. This comparative analysis helps us identify emerging trends, understand how current conditions deviate from the long-term norm, and make informed judgements about the potential direction of change. See Figure 2.20 for an example of our groundwater forecasts.

Figure 2.20 Example groundwater forecast at 60%, 80% and 100% LTA rainfall scenarios for Leasingham



2.4.5 Water quality drought forecasting

We are actively developing approaches to incorporate water quality-based forecasting into our forecasting tools. The objective is to enhance our ability to predict potential water quality outages and plan abstraction strategies accordingly. By integrating water quality forecasting into routine operational processes, we aim to improve resilience and minimise disruption to supply during periods of elevated risk.

The proposed methodology will utilise historical water quality data from our monitoring systems alongside predictive models that account for key influencing factors such as river flow, temperature, and rainfall patterns. These models will be supported by external datasets, including meteorological forecasts and catchment condition indicators, to provide a comprehensive view of potential water quality deterioration under varying hydrological scenarios.

Forecast outputs will be benchmarked against regulatory compliance thresholds and operational standards to identify sources at risk of failing water quality requirements. This will enable us to proactively adjust abstraction strategies, such as switching to alternative sources or implementing blending plans, before water quality issues impact supply. In addition, forecasts will feed into our drought management framework, ensuring that water quality considerations are integrated with quantity-based planning.

Incorporating water quality forecasting into our processes will allow us to move from reactive to proactive management, reducing reliance on short-notice interventions and improving customer assurance. This approach will also strengthen our ability to meet regulatory obligations by demonstrating robust planning measures to maintain compliance under challenging conditions. Our aim is to complete a pilot integration of the water quality forecasting models in our Ruthamford supply area by spring 2027.

2.4.6 Future of drought forecasting

As well as the water quality drought forecasting project, we are also working on other areas to improve our drought forecasting capabilities. A couple examples are included in the blue boxes.

GR10J

Reliable water resources planning depends on accurately simulating extreme droughts, but conventional rainfall-runoff models often perform poorly in dry conditions, particularly outside their calibration period.

These failures are linked to non-linear hydrological behaviour, such as altered recession dynamics, river-groundwater interactions, transmission losses and unrealistic post-drought recovery. To address these issues, an enhanced rainfall-runoff model based on the GR6J structure was developed and tested in several catchments in eastern England affected by influent rivers and artificial flow influences.

The new GR10J model introduces four additional parameters to represent deficit dynamics, evaporation losses, and riverbed seepage, which are activated only when required and remain well identifiable. This improved structure better simulates extreme droughts and offers new potential for water resources planning and drought management, with scope for similar enhancements in other lumped conceptual models. Our aim is to have the GR10J models integrated into our drought forecasting process by spring 2027.

Groundwater modelling

We are always exploring new technologies and approaches to assess groundwater drought impacts. As mentioned above, since Drought Plan 2022, AquiMod2 models have been used to help forecast observation groundwater source levels under different rainfall scenarios using historic observations and modelled short term forecasts.

Moving forward we have held initial discussions with the British Geological Survey who are exploring the use of combining groundwater models and AquiMod2; to use machine learning to produce dynamic aquifer summary diagrams. The benefit of this would be the possibility to forecast possible yield impacts at our public water supply sources as droughts progress. We will be investigating this more as part of the development of the next WRMP.

3. Part Three - Drought Actions

Part Three of our draft Drought Plan 2027 focuses on the potential actions that we can implement at the different levels of drought severity to ensure we mitigate any impacts to customers and the environment.

As with the WRMP24 strategy, our Drought Plan actions follow a twin track approach to manage dry weather and drought. This approach is set out in two main streams of actions - demand and supply. These actions are phased throughout the period of drought so that we implement the less severe demand and supply actions first before moving to the next stage. We always aim to use the demand and supply actions that limit the impact on customers, the environment and other users first. Any demand or supply actions will be applied as a result of timely and proportionate decisions taken by subject matter experts and the Drought Management Team (DMT).

A summary of the actions that we could choose to implement against each of the associated drought levels is shown in Table 3.1 and then visualised in Figure 3.1. All drought levels have been developed to allow enough time to prepare for and implement the appropriate actions as well realising the benefit from each action. Where appropriate actions are relevant to both household (HH) and non-household (NHH) customers and as the levels progress existing actions will continue but in an enhanced way. Depending on the water resources situation, we can choose to implement actions on a hyperlocal (within a WRZ), sub-regional (across WRZs) or a company-wide scale.

It is important to note that our drought levels and associated actions serve as guidelines for when specific measures should be triggered. If the potential risk to public water supplies is expected to materialise earlier than indicated by our water source levels, we reserve the right to adjust our drought status and implement actions proactively. All demand and supply actions have the ability to be applied at any time of year, but the majority of demand actions are likely to have the biggest impact during the summer months. During a dry weather or drought event we would assess the range of actions available to us to determine the best approach to mitigate water resources decline.

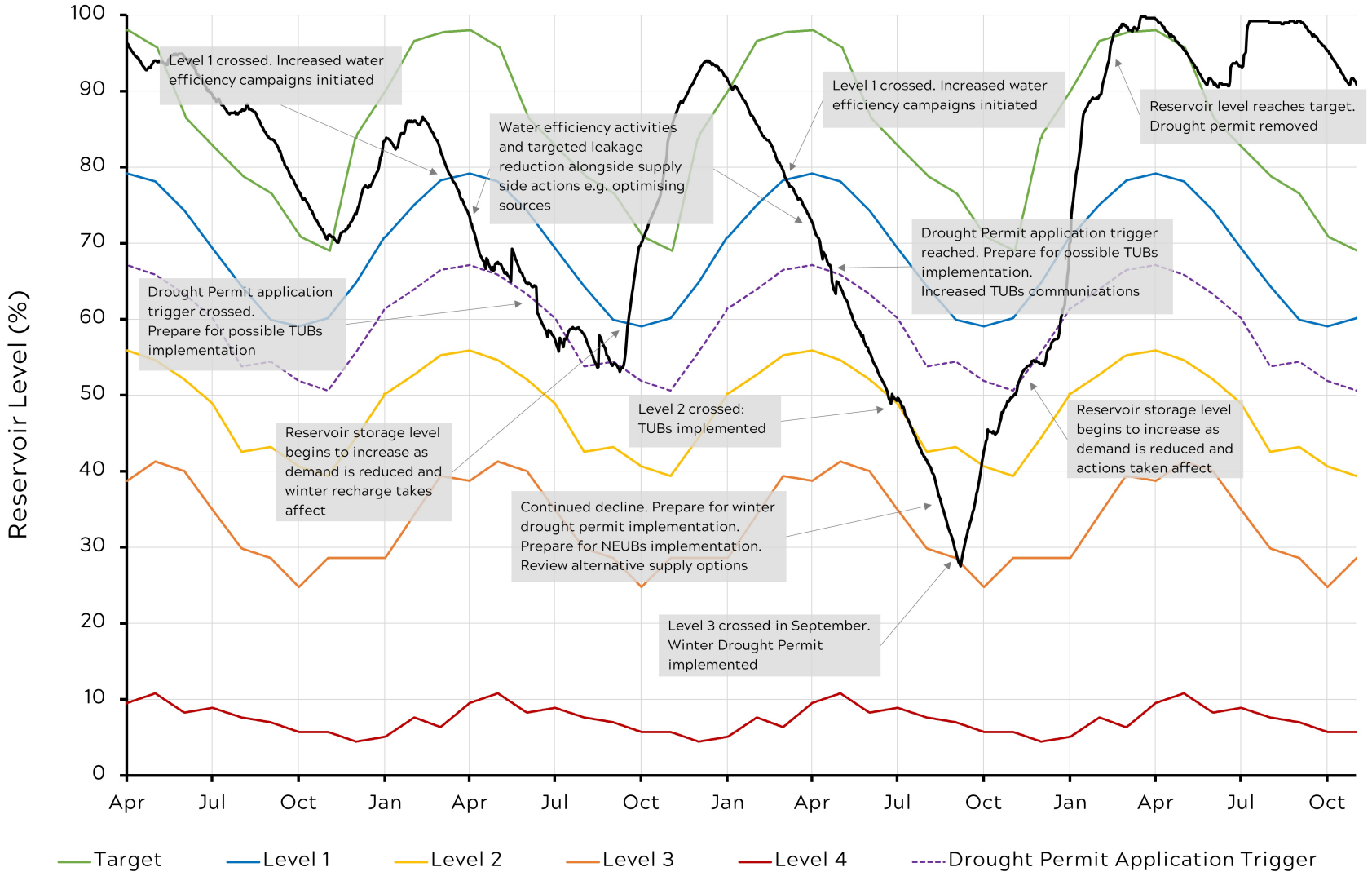
Further details on the key actions are provided in the following sections:

- **Section 3.1** - Demand actions
- **Section 3.2** - Supply actions
- **Section 3.3** - Extreme actions
- **Section 3.4** - Emergency planning and the Emergency Drought Plan
- **Section 3.5** - Drought recovery and post drought actions

Table 3.1 A summary of our drought levels and possible associated actions

Drought levels	Demand actions	Supply actions
BAU	Routine demand actions	Routine supply actions
1	Communication campaigns, enhanced use of our smart meter network to support water efficiency and enhanced leakage management and pressure optimisation	Optimising existing sources, using alternative sources, conjunctive use and available transfers. Minimising outage and losses.
2	Temporary Use Bans (TUBs) and further voluntary reductions	Drought permits and orders with minor environmental impact
3a	Non-essential Use Bans (NEUBs)	Drought permits and orders with moderate to major environmental impact
3b	Extreme demand actions	Extreme supply actions
4	Emergency drought restrictions e.g. rota cuts	Emergency supply actions

Figure 3.1 An example of how drought actions could be applied against the associated drought levels



3.1 Demand actions

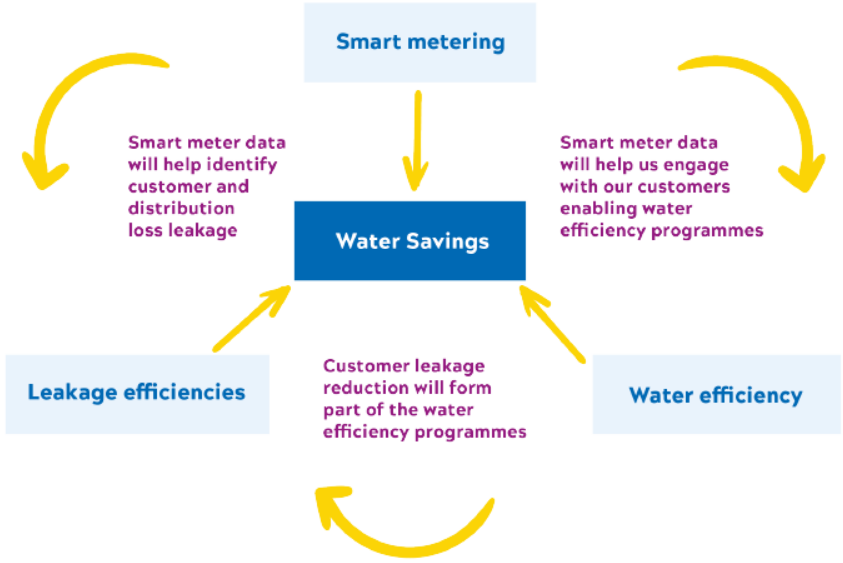
The following section outlines our approach to demand management and how it can escalate with different actions during dry weather and drought.

3.1.1 Demand management strategy

3.1.1.1 WRMP24

Our commitment to demand management and, in particular, the promotion of demand reduction and water efficiency has been demonstrated, as a central objective in our WRMP24. We plan to build upon our proven track record of delivering demand management savings, through our three-pillar strategy (Figure 3.2) including leakage reduction, fully realised smart metering program (by 2030) and innovative water efficiency initiatives.

Figure 3.2 Our three pillars of demand management



We intend to extend our ambitious AMP7 program of demand management options and smart meter installation, as we progress our WRMP24 strategy. By 2024/25 we had installed over 1 million smart meters and are seeing significant benefits in terms of customer engagement, behaviour change and continuous flow reductions (customer leakage and plumbing loss). We expect to complete our full smart meter installation programme for HH and NHH properties by 2030.

Our WRMP24 ambition is to drive the next 'step-change' in demand management through:

- Further technological innovation
- Enhanced communication strategies building upon our smart meter roll-out (MyAccount)
- Improved understanding of our customers behaviour
- The implementation of 'industry leading' water efficiency initiatives
- Initiatives aimed at working with our retail partners to drive water efficiency in the non-household sector with our business partners
- Initiatives aimed at working with our NAV partners to drive water efficiency
- Industry leading leakage reduction

Savings from our smart meter program, leakage reduction and water efficiency options, in combination with government led interventions are expected to more than compensate for company-wide increases in demand due to population growth during the WRMP24 planning period (2025-2050).

With our ambitious program for full smart meter installation and associated water efficiency measures, our customers should achieve a per capita consumption of approximately 115 l/h/d by 2030 and approximately 100l/h/d by 2050 (significantly less than the 2050 National Framework Target of 110l/h/d). Note that by 2050, this includes a significant impact due to government led interventions ('white good' and water utility labelling and mandatory design standards).

For further information on our WRMP24 demand management approach and the demand actions referenced within this section please refer to the **WRMP24 Demand Management** technical documents.

Case Study - Smart seasonal tariff trial

We are always exploring new ways to encourage customers to use less water. In April 2024, we launched our smart seasonal tariff trial for household customers in two areas – Lincoln and Norwich. With water companies being challenged to innovate around progressive tariff structures, we worked with the Centre for Competition Policy, to understand how tariffs and different communications can reduce demand and improve affordability. We developed a methodology and created a summer and winter structure, testing if paying a higher price for water between May and August would make a difference to usage, or if digital communications could also influence behaviour change. Around 30,000 customers are taking part in the trial, the largest trial in the industry.

Initial trial data is looking promising, adding to the summer peak moderation already shown due to BAU smart metering and communication activities. However, the initial trial year coincided with a particularly average summer. We, therefore, continued and expanded the trial through 2025 and will review findings in 2026 and 2027. Additionally, we are experimenting with alternate differential pricing between summer and winter months, to further test customer behaviours. We are also now able to communicate near real time bill impacts of summer water usage through MyAccount.

The initial positive results are leaning towards implementation across the Anglian Water region once the full smart meter roll-out has been realised. This new policy ultimately re-enforces the value of water to the customer, especially during high demand periods in the summer.

3.1.1.2 Drought Plan 2027

In developing the Drought Plan, we have considered how enhanced demand management might be implemented; to anticipate and mitigate potential dry weather and drought events.

We have therefore developed an approach that builds on the three pillars of demand management, introducing a gradual escalation of intervention intensity to reflect the severity of emerging water resource conditions. All elements are connected through an overarching communications strategy. This approach is also implemented alongside measures to address other forms of extreme water stress (such as summer peak demand), which may occur concurrently with drought.

3.1.2 Demand actions

There are a number of action categories that make up our Drought Plan demand action approach, some of which are enhanced throughout the escalation of drought and some that are standalone actions which are introduced at certain inject points as appropriate e.g. TUBs, NEUBs and rota cuts. Further details on restrictions are included in **Sections 3.2.2.1 - 3.2.2.3** and further information on extreme demand actions can be found in **Section 3.3.**

Table 3.2 sets out in detail the possible actions we have available to us at each drought level. However, this table is just a guideline, we do not expect to implement every action at each level, and we may choose to bring actions forward or delay them depending on the situation. Our DMT will determine the appropriate actions that are required at each drought level.

Actions that can be enhanced and escalated are summarised below:

Communication campaigns and messaging

Our baseline customer communication channels already concentrate on weaving water efficiency messaging into all our customer contacts. As we approach and enter drought conditions, we will accelerate messaging to customers through multiple traditional channels such as, emails, social media, radio and television, and face to face engagement (in hotspot areas / towns) regarding the water resources position, encouraging behaviour change to support us in reducing/managing demand. As of January 2026, we have over 1.4 million smart metered customers (aiming for full rollout to our entire customer base by 2030) and they all have access to the MyAccount information channel. We will utilise this fully to drive water efficiency messaging in preparation and during drought conditions. We will also work with national organisations (Water UK) and regional groups (WRE, WReN, WRSE) where feasible to coordinate communications, along with our Non-HH Retail partners and NAV companies. Further information on our communication plan strategy can be found in **Appendix 8**.

Water efficiency activities

This is normally done in tandem with communication campaigns, but focuses specifically on providing and implementing devices or schemes to encourage customers to be more water efficient. Devices that could be shared include smart sensors (such as smart shower sensors) and fitting of water saving devices by a plumber. Campaigns include fixing customer supply side leakage (utilising smart meters) and the leaky loos campaign.

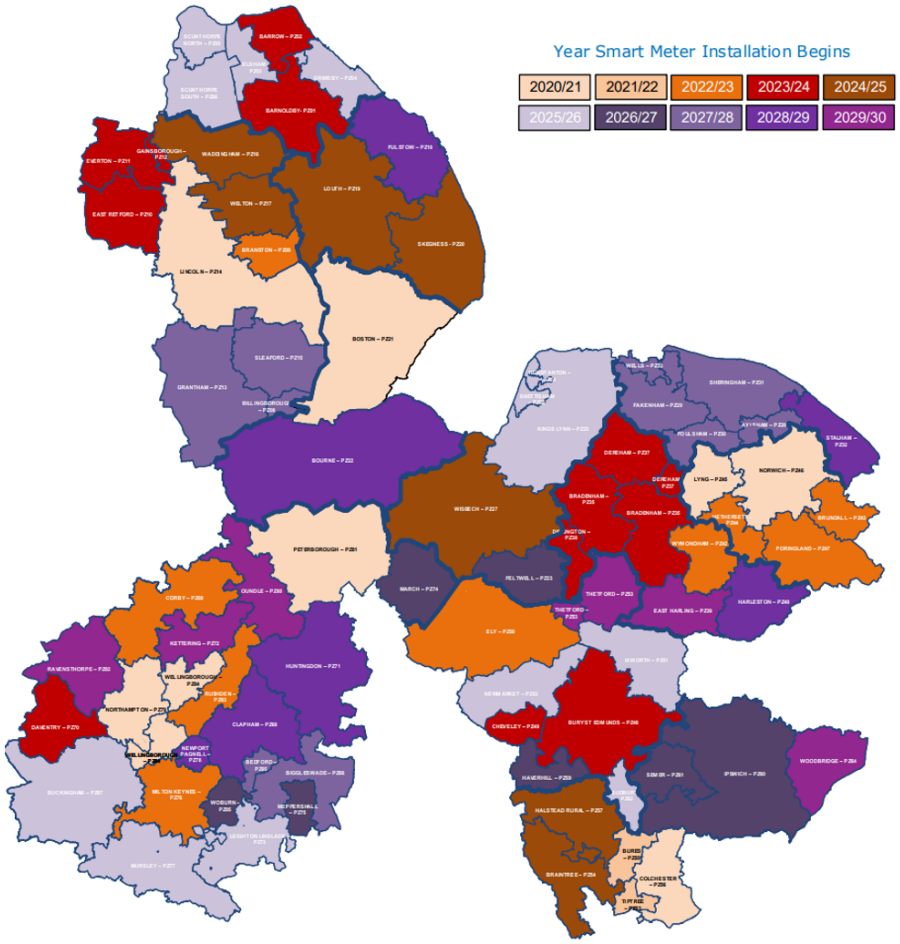
Customer metering

We will fully utilise smart meters to engage with customers and support reduction in usage as well as enhancing programmes that help customers to switch to measured charges and opt to have smart meters fitted.

The WRMP24 smart meter roll-out has been designed to be completed by 2030, as shown in Figure 3.3. However, we are currently looking to accelerate this to complete at a faster pace, potentially by 2028 or 2029.

Note that our smart meter programme covers both domestic and non-domestic customers and we will utilise this data in liaison with our Retail partners to drive water efficiency.

Figure 3.3 Planned smart meter installation roll out map



Targeted leakage reduction

Enhancing leakage management practices in areas at risk from drought utilising Anglian Water's PALM approach - Prevent, Awareness, Locate and Mend.

As part of WRMP24, we are conducting a programme of leakage targeted mains replacement, as well as replacement of climate change vulnerable mains. We are also intending to increase our 'Active leakage control' programme (find and fix) as well as targeting shared supplies (comms pipe leakage).

This all builds upon the significant savings we are seeing from smart metering and the identification of continuous flow (both customer supply pipe leakage (cspl) and plumbing loss). Current analysis indicates that we are saving up to 15l/prop/d on average for all smart metered customers.

As we approach and enter drought conditions we will increase our focus upon leakage interventions, noting that for the very dry period of 2025 we did experience increases in network leakage caused by very dry ground conditions.

Pressure Optimisation

Utilising our vast network of pressure reducing valves (PRVs) to optimise pressure in the most effective way to reduce leakage but also support reductions in customer usage in areas at risk from drought impacts.

Please note that we would fully assess any implications of additional pressure optimisation (beyond normal operations) at a sub-regional level. Consideration would be given to assessing water quality impacts as well as other consequences for example pressure at hydrants (for which we would liaise with local fire services as requested by Part 5 of the 2004 Fire and Rescue Services Act). More extreme pressure optimisation would require significant modelling before implementation.

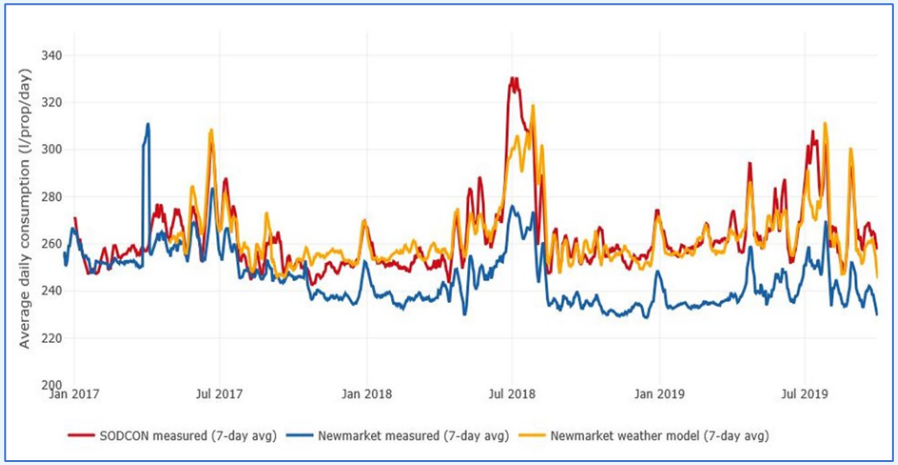
Tariffs

Extension of existing tariffs such as the seasonal tariffs mentioned in the case study above as well as looking at possible new tariffs to support during drought.

Case Study - Smart meter benefits during summer peaks (2018 impacts)

Smart meter data, from our long-term trial area, when compared with our control data and our weather model clearly shows, not just long-term reductions in per household consumption (PHC), but particularly lower summer peaks (especially during the significant summer peak of 2018). Note that these reductions in consumption show how the combination of smart metering and appropriate customer engagement can mitigate summer usage

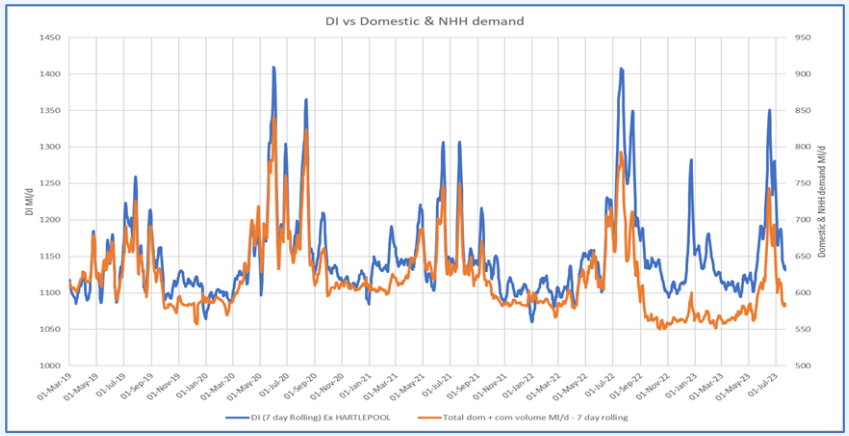
Figure 3.4 Demand Peaks and Smart Metering 2018



Case Study - Smart meter benefits during summer peaks (2022 impacts)

More recent data from our trial area shows that during summer 2022 consumption (HH and NHH) shows a significant drop compared with total Anglian demand (DI). Whilst understanding that NHH demand in the trial areas are somewhat different from the Anglian average, this indicates that mature smart meter areas have responded positively to dry weather and drought messaging and access to data reducing consumption relative to the non-smart meter customers.

Figure 3.5 Demand Peaks and Smart Meters 2022



3.1.2.1 Temporary Use Bans (TUBs)

As drought develops demand restrictions may be required to mitigate the decline of water resources. The first form of restriction is a Temporary Use Ban (TUB) which can be implemented by water companies under the Water Use (Temporary Bans) Order 2010.

A TUB is more commonly known as a 'hosepipe ban' but in reality, the restrictions cover a wider range of activities than just solely hosepipe use. A TUB is also commonly thought to just restrict HH customers which is not entirely true. For example, a TUB has the ability to restrict the use of a hosepipe to carry out domestic activities whether that is within a HH or NHH setting as long as it doesn't impact on the main business activity. A business is defined as those which pay business rates, and domestic properties are those subject to council tax.

We regularly review legislation to ensure we remain compliant with the requirements, especially if implementing restrictions is required. There haven't been any major changes in legislation since the Water Use (Temporary Bans) Order 2010 and therefore the activities that can be restricted are as follows:

- Watering a garden using a hosepipe
- Watering plants on domestic or other non- commercial premises using a hosepipe
- Cleaning a private motor-vehicle using a hosepipe
- Cleaning a private leisure boat using a hosepipe
- Filling or maintaining a domestic swimming pool 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
- Cleaning other artificial outdoor surfaces using a hosepipe

Most of the uses of water that may be prohibited under these powers only apply to the use of water drawn through a hosepipe or similar apparatus (by definition this would include sprinklers and pressure washers). The exception to this is filling or maintaining a domestic swimming pool or paddling pool and filling or maintaining an ornamental fountain, in which the use of water which may be prohibited extends to all means of filling (except for handheld containers), including fixed or permanent plumbing.

The TUB restrictions do not restrict any of the above activities being undertaken using:

- A bucket or watering can filled by hand
- Grey water use (bath / wash water)
- Rainwater collected in a water butt

A TUB is an action normally associated with implementation at drought Level 2 but we will choose to implement this action when we believe that a deficiency of supplies exists or is under threat. This means that a TUB could be implemented ahead of or after entering the associated level. We also have the ability to implement a TUB at a company-wide or sub-regional scale. This decision on scale of restrictions will be made during the drought event based upon understanding of the amount of WRZs at risk from further water resources decline.

Before implementing any restrictions, we would ensure that there had been a rigorous communications campaign telling customers about the water resources situation, why restrictions are needed and what is involved within the restriction. We would also allow a period of consultation where representations can be made.

Restrictions would be imposed for the minimum period required to allow sufficient water resources recovery back to 'normal' levels and would be lifted once this point had been reached.

Further information such as the TUB exceptions, concessions and notice periods can be found in **Appendix 5.**

3.1.2.2 Non-Essential Use Bans (NEUBs)

If the water resources situation continued to deteriorate then the next available restriction is a Non-Essential Use Ban (NEUB). This action requires an application to the Secretary of State for a Drought Order and only once this is approved can the restriction be implemented. Further details on the drought order process can be found in **Section 3.2**. This restriction by its definition aims to restrict all non-essential use and would impact both HH and NHH customers.

The Drought Direction 2011 (which replaced the Drought Direction 1991) sets out the restrictions available under an ordinary Drought Order, as allowed for under Section 73 of the Water Resources Act 1991 (WRA 1991). These are:

- 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 premises
- Cleaning industrial plant
- Suppressing dust
- Operating a cistern in any building that is unoccupied and closed

A NEUB is an action normally associated with implementation at drought Level 3 but this is a guideline and may flex depending on when a serious threat to supplies is realised. NEUBs could be applied at a company-wide or sub-regional scale. This decision on scale of restrictions will be made during the drought event based upon understanding of the amount of WRZs at risk from further water resources decline.

We will work closely with retailers and the NHH sector throughout dry weather and drought conditions ensuring that everyone is aligned and understands the situation and will only choose to apply for a drought order once we are confident that appropriate demand savings would materialise.

As per the TUB process, for NEUBs we would allow a period of consultation where representations can be made and restrictions would only be imposed for the minimum period required to allow water resources recovery back to 'normal' and would be lifted once this point had been reached

Further information such as the NEUB exceptions, concessions and notice periods can be found in **Appendix 5.**

3.1.2.3 Emergency Drought Orders

An Emergency Drought Order is the most severe customer restriction that could be imposed during a drought. This would only be considered in an emergency situation where water supplies were extremely depleted due to an exceptional shortage of rain.

In order to implement an Emergency Drought Order, we would have to apply to the Secretary of State for permission. The Order would most likely cover the introduction of rota cuts in the area at risk but could prohibit the use of water for any purpose we consider to be appropriate. Further information on Emergency Drought Orders is included in our Emergency Drought Plan.

In alignment with our level of service this type of action should only be needed if we experience a drought event that is a 1 in 200-year event or greater. Where customers experience interruptions to supply as a result of an Emergency Drought Order we would award compensation, in accordance with Condition Q in our Instrument of Appointment. As this action is associated with drought Level 4 it is covered within our Emergency Drought Plan rather than this Drought Plan which only covers up to Level 3. See **Section 3.4** for more information.

Table 3.2 Drought levels and associated demand actions

Level	Demand actions	Detail
BAU	Communication campaigns and messaging	• Campaigns to support our key messages and brand (hyperlocal and seasonal) including peak demand messaging. • Provision of seasonal tips and water saving advice through channels such as social media for activities such as gardening. • Improved analysis of smart meter consumption data and continued development of the 'My Account' app to provide quick easy access to data and services e.g. usage data comparisons, spotting customer side leaks, high consumption identification, personalised tips, proactive warnings. • Support and development of rewards schemes to encourage water saving behaviours e.g. setting of targets and challenges which could include rewards both at the individual and community level. • Support local events and annual awards ceremonies to promote great ideas and gain additional publicity.
	Water efficiency activities	• Campaigns focusing on key areas of water wastage e.g. leaky loos. • Schemes for customers in vulnerable circumstances and customers with affordability issues to fix leaky loos and leaky taps up to a capped value. • Provision of smart sensors and devices such as smart shower sensors linking into My Account. As well as trialling new and innovative devices. • Drop by 20 options for non-smart meter customers - fitting of water saving devices by a plumber and giving water saving advice.
	Customer metering	• Progressing the full roll-out of smart metering across the Anglian Water region. The intention is to accelerate the installation of smart meters and complete the programme 1 year early in 2029. • Progressing our compulsory switching programme, which means that all customers who are currently metered, will be switched to 'billed measured' charges (i.e. metered and measured) by 2030. 'Compulsory switching' will follow areas where we are currently smart metered, such that customers will already have reduced leakage, prior to switching (note that measured customers use on average 15% less water than unmeasured customers). • In association with this we are encouraging customers to opt to have meters and become measured.
	Targeted leakage reduction	• Reducing leakage through our PALM approach - Prevent, Awareness, Locate and Mend. • Full implementation of our smart meter continuous flow reduction communications programme. • Fixed (permanent) acoustic logging is a leakage pinpointing method, which involves the installation of permanent sensors along the distribution network. These sensors 'listen' for leak noises and allow a more accurate pinpointing of leaks, saving Active Leakage Control (ALC) effort and, therefore, time. This reduces detected leak run-times which leads to overall leakage reduction. • Using different technology to find leaks on different types of pipework e.g. hydrophone sensors used on plastic mains and large diameter pipes. • Water main replacement is one of the key methods for reducing physical water losses from the network. • Provide support to fix customer side supply pipe leaks (CSPL) e.g. visiting location to identify the issue.
	Pressure optimisation	• Enhancements in optimising pressure in the network to reduce both leakage and consumption. • Reduce leakage via pressure optimisation with new PRVs. • Reduce leakage by upgrading PRVs where fixed outlet PRVs are changed to 2 stage or fully modulated valves.
	Tariffs	• In April 2024, we launched our smart seasonal tariff trial for household customers in two areas – Lincoln and Norwich. • We developed a methodology and created a summer and winter structure, testing if paying a higher price for water between May and August would make a difference to usage, or if digital communications could also influence behaviour change. • New trials and expansion of existing trials to be considered.
Level 1	Communication campaigns and messaging	**Dry weather and drought related communication campaigns to use water wisely would be implemented.** This would be a key area where enhanced communication programmes could be scaled up as the severity of the water resources situation increases. These will be significantly enhanced with the rollout of the smart meter programme and the potential to utilise associated mobile apps and websites to directly understand and target customer communications. A range of communications channels will be utilised to increase public engagement and request customers to use less water voluntarily. Additional interventions could include competitions and challenges promoted in specific areas.
	Water efficiency activities	**Dry weather and drought focused water efficiency and behaviour change interventions.** Examples could include: • Increased promotion of water saving devices in areas under pressure. • Free or subsidised repairs of internal plumbing losses. • Behavioural: gamification-based initiatives offering non-financial incentives e.g. community-based water saving competitions with Anglian Water donating money or sponsoring environmental or educational projects that are important for the local community.
	Customer metering	**Further efforts would be made to encourage meter opting.**

Level	Demand actions	Detail
		This could include encouraging customers to switch from being an 'unmeasured' to 'measured' billed customer. This would accelerate and complement our compulsory switching programme currently being applied to customers who already have a meter. Additional interventions could include: • Targeted activity to demonstrate the benefits of customers switching to measured tariffs. • Encouraged metering of remaining unmetered customers (9% as of 2024/25). • Accelerated upgrade of any remaining 'standard' Automated Meter Reading (AMR) meters to 'smart' Advanced Metering Infrastructure (AMI) meters e.g. in targeted zones.
	Targeted leakage reduction	**Targeted leakage reduction in areas at risk**. As with the enhanced communication programmes, leakage reduction using PALM would be scaled up as the severity of the water resources situation increases. Activities could include: • ALC - increase in resources for leak detection (e.g. additional contractors, focused noise logging) and divert resources from other activities on to 'find' activities. • Leak repairs - increase in resources for repairs (e.g. additional contractors) to allow quicker repair of visible and non-visible leaks. • Smart meter continuous flow and CSPL reduction - fixing major (or all) supply pipe leaks at Anglian Water expense or offer subsidies / other help for customers in repairing leaks to their own pipes. • Advanced replacement of infrastructure - additional leakage-driven mains replacement.
	Pressure optimisation	**Targeted pressure optimisation in areas at risk.** Enhancements in optimising pressure in the network to reduce both leakage and consumption.
	Tariffs	**Extend our 'Summer Tariff' trial.** Our tariff trial is showing benefits in mitigating summer peak demand so an extension to more customers could have an overall positive impact.
Level 2	**Temporary Use Ban (TUB)**	**Restriction of the domestic use of devices such as hosepipes and sprinklers.**
	Communication campaigns and messaging	Enhanced communication campaigns would be scaled up and the tone of messaging amended as the severity of drought increases.
	Water efficiency activities	Further promotion of water saving devices in areas under pressure.
	Customer metering	Additional interventions could include: • Further targeted activity to demonstrate the benefits of customers switching to measured tariffs. • Accelerated upgrade of 'standard' AMR meters to 'smart' AMI meters e.g. in targeted zones.
	Targeted leakage reduction	Accelerated targeted leakage reduction including ALC.
	Pressure optimisation	Further enhancements in optimising pressures in the network to reduce leakage and consumption.
	Tariffs	Continue to extend existing tariff trials to areas at risk.
Level 3	**Non-Essential Use Ban (NEUB)**	**Restriction on non-essential use of water via a Drought Order.**
	Communication campaigns and messaging	Enhanced communication campaigns would be scaled up and the tone of messaging amended as the severity of drought increases.
	Water efficiency activities	Further promotion of water saving devices in areas under pressure.
	Customer metering	Additional interventions could include: • Further targeted activity to demonstrate the benefits of customers switching to measured tariffs. • Accelerated upgrade of 'standard' AMR meters to 'smart' AMI meters e.g. in targeted zones.
	Targeted leakage reduction	Accelerated targeted leakage reduction including ALC.
	Pressure optimisation	Further enhancements in optimising pressures in the network to reduce leakage and consumption.
	Tariffs	Continue to extend existing tariff trials or create a drought specific tariff in areas at risk.

Level	Demand actions	Detail
	All other possible actions including extreme actions to avoid Emergency Drought Orders (further detail on extreme actions in **Section 3.3**).	
Level 4 (Emergency Drought Plan)	**Emergency Drought Order**	**Introduction of the use of rota cuts via a Drought Order.** Rota cuts would involve temporary cuts to the water supply for parts of the day in the areas affected.

3.1.3 New Appointments and Variations (NAVs)

New Appointments and Variations (NAVs) are an expanding feature related to property development growth. NAVs normally cover new developments and as such undertake utility management for customers within these developments (Anglian Water becomes the wholesale bulk water provider).

The population served are, consequently, not Anglian Water customers and we, therefore, do not have a direct relationship with these customers.

We have a good relationship with the NAVs that operate within our region and already work together closely throughout the year, not just during drought. This puts on a good footing when it comes to aligning and enhancing actions during dry weather and drought conditions.

As noted, NAV developments are mainly HH properties in nature, with very little NHH business demand, such that interventions when appropriate should mirror those taken with regard to Anglian Water HH customers noted in Table 3.2. We are keen to support NAVs to ensure that a consistent approach is taken across our region. However, it is noted that not all NAVs are smart metered, for example, and so cannot utilise the full potential that smart meter communication and continuous flow reduction facilitates. Therefore, we will work together on appropriate actions alongside those referenced in Table 3.2 and will liaise on:

- Providing regular updates on the water resources situation and the forecast risk for drought level status changes and the associated implementation of drought actions being required
- Customer communications regarding water efficiency measures, including creating joint branded campaigns to ensure consistent messaging and sharing downloadable content and best-practice guidance.
- The potential for accelerating leakage reduction within the NAV developments
- The implementation of TUBs and NEUBs

At each drought level we will consult with the NAVs on how they implement their drought actions and how we can assist with additional resources (in alignment with the NAVs own Drought Plans).

3.1.4 Retailers and Non-Household (NHH) customers

Anglian Water works with a wide range of retailers who offer valuable insight about our NHH customers.

As part of the WRMP24 demand management option development process, and in conjunction with our WRE partners, we engaged with our retailers and business customers, in order to gauge opinion on further water efficiency measures for the business sector. This engagement (in association with WRE and 'Blue Marble') was conducted:

- to understand the retailer perspective regarding the promotion of water efficiency
- to develop and refine propositions and understand and overcome barriers
- to explore these propositions and how they might be implemented with retailers and non-household customers

Consequently, for WRMP24, we developed a suite of water efficiency options which include:

- measures to reduce customer supply pipe leaks, based around the provision of smart meter data and further potential incentives
- measures to reduce leakage from internal plumbing losses, based around the provision of smart meter data and further potential incentives (leaky loo find and fix)
- assistance and incentivisation with regard to water efficiency or audit visits and the retrofit of water efficient devices (these potentially funded by wholesalers)

We are also looking into evaluating additional measures with our partners, including:

- water recycling or re-use through the provision of information, scheme design and consultancy support
- incentives and rebates for water consumption reduction

We are currently installing smart meters for all NHH businesses, as part of our full smart meter roll-out. These smart meters will be essential in providing Retailers with the data necessary to facilitate water efficiency and leakage reduction.

As we approach dry weather and drought conditions, our WRMP24 approach and the close relationships we foster with the retailers all year round, puts us in a good position to work with NHH customers on demand actions to minimise water resource decline. Similarly to NAVs we also share regular situation reporting updates to ensure that retailers are able to proactively plan for implementation of possible actions and start discussions with their customers. It is especially

important that communications are aligned as we recognise that NHH customers will likely also pick up messaging from the broader media communications ongoing at the time.

We have set out some possible actions against each drought level in Table 3.3 using the same format as Table 3.2. Please note that not all the actions referenced in Table 3.3 will be appropriate for all NHH users so these will be applied on an area-by-area basis.

Case Study - Trialling NHH Tariffs

Anglian Water are currently trialling new tariff structures for NHH users. Initially we are targeting high consumption users encouraging them to prove their water efficiency, with assistance through water efficiency audits. We are anticipating that companies will look to improve water efficiency with respect to both processes and water losses, showing reductions in consumption. Once usage has been benchmarked companies will be encouraged to maintain demand levels by staying on the standard 'water efficient' tariff, with a penalty 'higher tariff' for usage above these agreed limits.

Table 3.3 Drought levels and associated NHH demand actions

Level	Demand actions	Detail
BAU	Communication campaigns and messaging	. We will liaise with Retailers regarding communication campaigns, combining approaches where appropriate.
	Water efficiency activities	. Water Efficiency Visits - Low size customer (Retailer driven). This option is the smart meter targeted NHH water efficiency audit for smaller customers with lower estimated per property consumption values (similar to the household 'drop20' option, with similar targeted interventions; leaky loos, taps etc.). This option will deliver water saving efficiency packages, on a scaled basis, dependent upon the size of water consumption per property. Note that this option is driven by smart meter data, indicating properties with high usage / continuous flow. . Water Efficiency Visits - Medium sized customers (Retailer/consultant driven) - This option is the smart meter targeted NHH water efficiency audit for medium sized customers with medium estimated per property consumption values. This option will deliver smart meter targeted specialist water efficiency 'Water Audit Visits' with 'find and fix' services for larger consumers (with per property consumptions of approximately 25,000 l/prop/day). . Water Efficiency Visits - Efficiency audit for large sized customers with large estimated per property consumption values. This option will deliver smart meter targeted specialist water efficiency 'water audit visits' with 'find and fix' services for very large consumers (with per property consumptions of approximately 500,000 l/prop/day). . Water Efficiency Visits - Retailer Incentive - plumbing loss reduction (Retailer driven). We will look to incentivise 'plumbing loss' repairs with a financial incentive to the Retailers in order to impact longer running leaks. This is similar to the target 100 program that has been developed for the HH sector. . Smart meter identified plumbing loss fix. This option targets NHH plumbing loss repairs for properties identified to have continuous flow (through smart metering). The number of properties targeted will align with the water efficiency visits (i.e. 3000 per year - with approximately 75% of NHH stock impacted by 2050).
	Customer metering	. Progressing the full roll-out of smart metering for NHH customers across the Anglian Water region, with over 50K smart meters installed (2025/26). The intention is to accelerate the installation of smart meters for both HH and NHH customers to complete the programme 1 year early in 2029.
	Targeted leakage reduction	. Smart meter identified CSPL option targets NHH repairs for properties identified to have continuous flow (through smart metering). The number of properties targeted will align with the water efficiency visits (i.e. 3000 per year - with approximately 75% of NHH stock impacted by 2050).
	Pressure optimisation	. Enhancements in optimising pressure in the network to reduce leakage. . Leakage reduction via pressure optimisation with new PRVs. . Leakage reduction through PRV upgrades where fixed outlet PRVs are changed to 2 stage or fully modulated valves.
	Tariffs	. We are currently trialling new tariff structures for NHH users. . Initially we are targeting high consumption users encouraging them to prove their water efficiency through reviews of processes and water losses. This will be assisted through water efficiency audits. . Once usage has been benchmarked companies will be encouraged to maintain demand levels by staying on the standard 'water efficient' tariff, with a penalty 'higher tariff' for usage above these agreed limits.
Level 1	Communication campaigns and messaging	**Dry weather and drought related communication campaigns to use water wisely would be implemented.** This would be a key area where enhanced communication programmes could be scaled up as the severity of the water resources situation increases. We will focus on collaborative communications campaigns with retailers, in terms of joint branded communications to ensure consistent messaging and to promote water efficiency. Targeting large discretionary users with communications where appropriate such as golf courses and plant nurseries, as well as stakeholders such as National Trust and Network Rail, to manage water use.
	Water efficiency activities	**Dry weather and drought focused water efficiency and behaviour change interventions** Examples could include . Increased promotion of water saving devices in areas under pressure. . Free or subsidised repairs of internal plumbing losses. . Joint activities with retailers for NHH, increasing the number of water use audits / efficiency visits (targeting high usage customers).
	Customer metering	. Accelerated upgrade of any remaining 'standard' Automated Meter Reading (AMR) meters to 'smart' Advanced Metering Infrastructure (AMI) meters e.g. in targeted zones.
	Targeted leakage reduction	. Accelerated identification and acceleration targeting of high continuous flow or long running NHH leakage. . Further work with Retailers to reduce continuous flow.

Level	Demand actions	Detail
	Pressure optimisation	**Targeted pressure optimisation in areas at risk** . Enhancements in optimising pressure in the network to reduce leakage.
	Tariffs	. Extension of current tariff trial for Retailers and NHH customers.
Level 2	**Temporary Use Ban (TUBs)**	**Restriction of the use of devices such as hosepipes and sprinklers to carry out domestic activities.**
	Communication campaigns and messaging	Enhanced communication campaigns would be scaled up and the tone of messaging amended as the severity of drought increases.
	Water efficiency activities	Additional joint activities with retailers for NHH, such as water use audits / efficiency visits.
	Customer metering	Accelerated upgrade of any remaining 'standard' Automated Meter Reading (AMR) meters to 'smart' Advanced Metering Infrastructure (AMI) meters e.g. in targeted zones.
	Targeted leakage reduction	Accelerated targeted leakage reduction.
	Pressure optimisation	Further enhancements in optimising pressures in the network to reduce leakage.
	Tariffs	Continue to extend existing tariff trials to areas at risk.
Level 3	**Non-Essential Use Ban (NEUBs)**	**Restriction on non-essential use of water via a Drought Order.**
	Communication campaigns and messaging	Enhanced communication campaigns would be scaled up and the tone of messaging amended as the severity of drought increases.
	Water efficiency activities	Additional joint activities with retailers for NHH, such as water use audits / efficiency visits.
	Customer metering	Accelerated upgrade of any remaining 'standard' Automated Meter Reading (AMR) meters to 'smart' Advanced Metering Infrastructure (AMI) meters e.g. in targeted zones.
	Targeted leakage reduction	Accelerated targeted leakage reduction.
	Pressure optimisation	Further enhancements in optimising pressures in the network to reduce leakage.
	Tariffs	Continue to extend existing tariff trials or create a drought specific tariff in areas at risk.
	All other possible actions including extreme actions to avoid Emergency Drought Orders (further detail on extreme actions in **Section 3.3**).	
Level 4 (Emergency Drought Plan)	**Emergency Drought Orders**	**Introduction of the use of rota cuts via a Drought Order.** Rota cuts would involve temporary cuts to the water supply for parts of the day in the areas affected.

3.1.5 Demand action savings

As part of WRMP24 we reviewed the possible savings that we might be able to achieve from the key demand actions such as TUBs and NEUBs. For the first time we have also developed an indication of what might be achieved for some of the activities listed as potential options during Level 1. This benefit has been calculated by assessing a collection of standard water efficiency activities as if they were enhanced during dry weather and drought.

The water efficiency activities that have been assessed include:

- communications and messaging campaigns at a company-wide and local level
- uplifts to our introduction of smart devices
- additional home water efficiency visits
- additional focus on fixing leaky loos and assistance for customers in fixing CSPL leaks
- additional advice on garden usage and the provision of 'garden kits'

These activities have been assessed for their cost and benefit at WRZ level, as additional drought specific actions for inclusion in the WRMP24 Data Tables, and are not, therefore included in our WRMP24 main option portfolios. Please note that other Level 1 activities such as customer metering, targeted leakage reduction, pressure optimisation and the use of tariffs is not included in this saving calculation. As part of WRMP29 we aim to progress full cost benefit analysis for a wider range of drought options.

With regards to TUBs and NEUBs we have re-assessed the savings utilising expert understanding of the Anglian region, updated demand management models and learnings from other companies from the 2022 and 2025 drought through the UKWIR[6] [7] drought review projects where appropriate.

Savings are summarised in Table 3.4 and are aligned with WRMP24. The values notes are minimum benefits expected because the impact is highly dependent on the time of year and the weather conditions during implementation. The savings are cumulative, with the assumption that preceding options will already have been implemented in order to achieve the total savings associated with subsequent options.

Table 3.4 Demand savings for the key demand actions.

Drought levels	Demand actions	Demand savings
1	Water Efficiency Activities	Approx. 1% *
2	Temporary Use Ban (TUB)	3%
3	Non-Essential Use Ban (NEUB)	14%
4	Rota cuts	34%

*Reflects the increased standard water efficiency actions during dry weather and drought (referenced in **Appendix 4**).

Due to the importance of the benefit that demand actions can provide during a drought event we will keep a close eye on the performance of each action. Although it is difficult to assess the benefits that each action has had during an event, as part of our WRMP24 demand management programme we are developing a methodology to try and understand this is more detail, this is summarised below:

- Created a demand monitoring framework to monitor overall trends in consumption and to report on our activities.
- Smart meter data is critical to this process as it allows longitudinal studies of customer cohorts impacted by our various demand actions.
- Analysis is still at an early stage as we gain access to statistically significant volumes of current and historic data, and work on disentangling the variety of influences that can affect demand and customer consumption (weather, daily, weekly consumption patterns, societal influence, cost of living.
- We are initiating the development of robust scientific analytical processes and are beginning to generate initial findings and insights. We are also utilising 'best practice' industry methodologies.
- During dry weather and drought, we will look to use the same methodologies outlined above to assess the benefits that different actions have had on demand.

Further information on the water efficiency activities that have been included in the assessment of demand savings and the assumed demand action benefits for each WRZ can be found in **Appendix 4.**

6 UK Water Industry Research (2023) Managing through drought: Code of Practice and guidance for water companies on water use restrictions

7 UK Water Industry Research (2023) Review of 2022 drought demand management measures

3.2 Supply Actions

The following section outlines our supply action approach and how it can escalate with different actions during dry weather and drought.

3.2.1 Supply management strategy

Supply actions are utilised to maintain supply during a dry weather or drought event in contrast to demand actions, which are used to try and manage and reduce demand for water. Supply actions have been developed to be applied across our region and to also to specific sources (e.g. reservoirs, rivers and groundwater) where appropriate. These source specific actions are described further in the sections to follow.

The actions available, range from routine operations that can then be enhanced through the different levels of drought to actions that require a change to our abstraction licence (e.g. drought permit or drought order) and to more extreme actions to try to mitigate reaching Level 4 (Levels set out in Table 3.1). Drought permits and orders are discussed more in **Section 3.2.7**. and extreme actions are discussed more in **Section 3.3.**

Our aim is always to implement supply actions that minimise impacts on our customers, the environment, and other users. The implementation and sequencing of any actions beyond routine operations are coordinated through close liaison between key teams, including water resources, supply, water quality, and production planning. We have quantified the possible benefits available with our drought permits but as the other supply actions are not specific, we would evaluate their effectiveness at the time depending on the water resources situation. These decisions are based upon operational experience, modelling, monitoring and environmental assessments carried out in the Strategic Environmental Assessment (SEA) and Environmental Assessment Reports (EARs) to ensure the best response to the drought event. Actions such as drought permits would have to be agreed by DMT and Board before application and implementation.

If any supply actions are likely to result in temporary changes to how customers receive their water (e.g. aesthetic quality of water) this will be communicated clearly.

3.2.2 Production planning

Growing levels of connectivity and complexity in our supply system creates new operational challenges, but also the opportunity to do things differently. Anglian Water recognises the importance of ensuring the system continues to be operated in the most efficient and effective way possible to meet the needs of our customers both now and in the future. To do this, a Production Planning team has been set up and a new Planned Production operating model has been developed.

Production Planning is a proactive, data driven approach to help Anglian Water balance supply and demand across the network. It ensures we get the right quality and quantity of water to the right place at the right time, using real time data, modelling and system constraints to guide decisions.

It replaces previous localised, reactive approaches with a strategic, coordinated, region wide planning capability, giving us a single, consistent view of how to run the system safely, efficiently and compliantly.

3.2.2.1 How it works

Production Planning operates across three interacting horizons:

- **Long term** - Supports the WRMP and drought planning by informing system capability, constraints and future investment decisions.
- **Medium term** - Provides forward looking, tactical planning (daily to weekly) against expected demand, operational and environmental constraints and operational changes.
- **Short term** - Converts strategic plans into clear, actionable execution plans containing set point instructions for sites and networks, ensuring all teams work to the same direction.

To enable the Production Planning community to make informed decisions, a bespoke and cutting-edge system tool has been created to streamline and optimise our water supply management process.

Inputs to the tool include:

- Telemetry and flow data
- Constraint hierarchies (including physical system constraints, environmental, legal and regularity factors)
- Planned works, outages and operational changes
- Demand forecasts and scenario modelling
- System performance and storage levels

Outputs from the tool and Production Planning process include:

- Regional production plans
- Flow, pressure and storage set points
- Daily/weekly execution plans
- Alerts, Key Performance Indicators and operational checks

3.2.2.2 Working together to support drought management

Production planning is a core enabler of our drought response as it helps us to:

- **Optimise abstraction** and ensure compliance with licence limits across various time horizons
- **Prioritise sources** based on risk, quality and resilience
- **Maximise use of strategic assets** and support plans that maintain surface water storage resilience
- **Stabilise supply systems**
- **Coordinate actions across teams** so the whole network behaves predictably during stress

To ensure Production Planning is a success, colleagues from across the business such as modellers, engineers, supply and network teams, water resources and drought experts work together. The result is a single, consistent source of truth for daily system operation–essential during dry weather and drought events, when alignment is critical.

3.2.3 Supply action summary

The range of supply actions that are available to us from BAU onwards and can be enhanced as appropriate throughout the different drought levels (e.g. drought levels 1 to 3) are summarised below and set out in Table 3.1. These supply actions are all operated within existing abstraction licence conditions and agreements. We would review the actions available to us in each WRZ and determine the best options to implement and enhance from drought level 1 onwards to ensure an efficient and effective approach to drought management.

3.2.3.1 River augmentation and support

We can operate groundwater sources to abstract water from the ground which is then discharged into rivers as augmentation. The augmentation of rivers upstream of reservoir abstraction points can increase the amount of water available than what would otherwise be in the river naturally.

3.2.3.2 Alternative river abstraction sources

Utilising alternative or secondary river abstraction sources to support supply. This can occur within a WRZ to enhance water available for supply or directly to support a reservoir that has multiple abstraction points to enhance reservoir refill.

3.2.3.3 Supply system optimisation and conjunctive use

Where a WRZ or supply system has multiple different types of sources (e.g. rivers and groundwater) available to support supply we can use them conjunctively to ensure water is being used in the most efficient and effective way possible within a supply network to mitigate any potential risks from dry weather or drought. Our production planning process is utilised to make these decisions and then implement control or system-based changes.

3.2.3.4 Source commissioning, maintenance and rehabilitation

At any one time we normally have a range of commissioning, maintenance and rehabilitation processes ongoing to support supply systems. Commissioning can occur where we already have licenced sources, but they are not fully connected into our network. Maintenance occurs at a range of locations including raw water abstraction sources and also within the WTW or supply network to optimise utilisation and output of water. Rehabilitation is used to increase or return a source to the yield that is expected or required from it.

If appropriate all these actions can be enhanced or targeted in areas at risk from dry weather and drought.

3.2.3.5 Tankering

Operating tankers to move water from places of surplus to places that are more at risk from dry weather and drought. In most scenarios this is used as a more ‘extreme’ action, but it can also be used as a more ‘standard’ action to ensure systems are balanced and operating at max capacity.

3.2.3.6 Internal and external transfers

We can operate a range of transfers across different spatial scales including transferring water within WRZs, between WRZs, across the region with strategic interconnectors and between neighbouring water companies as seen in **Section 1.5.3.**

The optimisation of internal and external transfers would be managed by the Production Planning team, dependent on the risks being presented. We would ensure proactive communication with neighbouring water companies to understand the options available if cross company transfers are to be increased or decreased.

3.2.3.7 Loss reduction

We regularly review and implement schemes to realise opportunities to reduce water losses within the raw water and water treatment work system. Assets in scope would include raw water abstraction points, raw water mains and WTWs.

3.2.4 Reservoir supply actions

Using the supply actions set out in **Section 3.2.3**, specific actions have been developed for each of our reservoirs (Table 3.5). As Ravensthorpe and Hollowell reservoirs are naturally filled they don't have specific supply actions but are used to support the wider Ruthamford system.

Table 3.5 Reservoir supply actions

Reservoir	WRZ	Supply actions
Alton Water	Suffolk East	Utilise a secondary abstraction point from the Mill River at Bucklesham.
Ardleigh	Essex South	River augmentation supplied from Balkerne groundwater source upstream of the reservoir abstraction point.
		Drought permit to increase river augmentation and groundwater support to wider WRZ.
Covenham	Lincolnshire East	Utilise a secondary abstraction point from the River Gt. Eau at Cloves Bridge to transfer water into the Louth Canal for abstraction into reservoir.
Grafham Water	Ruthamford South	Two stage drought permit to alter the MRF licence condition at the Offord abstraction point on the River Gt. Ouse.
Rutland Water	Ruthamford North	Utilise both abstraction points - Wansford on the River Nene and Tinwell on the River Welland.
		Drought permit to reduce the MRF licence condition at the Wansford abstraction point on the River Nene.
Pitsford Water	Ruthamford North	Drought permit to reduce the MRF licence condition at the Duston Mill abstraction point on the River Nene.
Ruthamford	Ruthamford	Conjunctive use of all reservoirs in the Ruthamford WRZs by operating transfers and the Grafham resilience scheme to optimise storage across the region.

3.2.5 Direct river intake supply actions

Using the supply actions set out in **Section 3.2.3**, specific actions have been also been developed for each of our direct river intakes (Table 3.6).

Table 3.6 Direct river intake supply actions

Direct river intake	WRZ	Supply actions
River Ancholme at Cadney	Lincolnshire Central	Liaise with the Environment Agency to optimise the transfer of water from the Trent-Witham-Ancholme Scheme (TWAS).
		Drought order could be applied for to further enhance the support provided by the Trent Witham Ancholme Scheme (TWAS) .
River Trent at Hall	Lincolnshire Central	Drought permit to reduce the MRF licence condition.
River Gt. Ouse at Clapham	Ruthamford South	Optimise input into supply by using conjunctively with Grafham Water.
River Nar at Marham	Fenland	Conjunctively utilising other sources within WRZ and outside WRZ using strategic interconnectors.
River Wissey at Stoke Ferry	Fenland	Utilise secondary abstraction point from the Cut-off channel either by providing compensation to the River Wissey or for use directly into supply.
		Drought permit to increase groundwater support from Wellington Wellfield.
River Wensum at Heigham	Norfolk Norwich and the Broads	Utilise secondary abstraction point at Costessey on the River Wensum as well as the storage in Costessey Pits.
		Drought permit to increase groundwater support from Costessey.

3.2.6 Groundwater supply actions

The majority of our groundwater sources tend to be more resilient against drought as the aquifers act as a buffer against rapid changes in rainfall. This gives us time to plan the best approach and form of action. We would utilise a wide range of the actions listed in **Section 3.2.3**. to ensure groundwater dominated WRZs mitigate the impacts of drought. We will proactively monitor the areas that include drought vulnerable sources (**Section 2.3.3**) and then actions would be focused in areas at greatest risk.

As dry weather and drought develops, we will use our water resources forecast tools, indicative drought levels and increased monitoring of water levels and water quality to identify the risk areas.

Key actions that we would consider and implement across our groundwater sources, if required, are:

- **Supply system optimisation and conjunctive use** : For example, utilising more secure sources to alleviate pressure on a drought vulnerable source(s).
- **Source commissioning, maintenance and rehabilitation** : For example, fast tracking source maintenance and carrying out operational actions such as lowering groundwater pumps. Also commissioning or choosing sources to rehabilitate based on drought risk.
- **Loss reduction** : For example, focusing investment to reduce raw water losses at groundwater sources supporting an area in drought risk.

3.2.7 Drought permit and drought orders

Drought permits and drought orders can be sought by a water company to secure additional water resources or to restrict the use of water.

These would only be considered under periods of exceptional shortages of rainfall, which result in serious deficiencies in our water supplies. Drought permits and drought orders if granted can allow greater flexibility to manage water resources and minimise the effects of a drought on public water supply and the environment.

The Water Resources Act 1991, as amended by the Environment Act 1995 and the Water Act 2003, allows for three legislative ways for dealing with drought situations:

- Drought permits
- Drought orders - ordinary
- Drought orders - emergency

There are a number of key differences between drought permits and drought orders that have been summarised in**Table 3.7**. Emergency drought orders are covered separately in our Emergency Drought Plan.

Before we apply for a drought permit or drought order we will have taken the appropriate actions to conserve supplies and reduce demand in the areas at risk, as detailed in the other sections of **Part 3**. We will use the drought levels as a guide to when these actions might be required but if the potential risk to public water supplies is likely to be realised earlier than the levels noted on our water sources, then we reserve the right to change to implement actions proactively.

Please note that no compensation is expected to be awarded in the event of implementing drought permits or drought orders. However, if appropriate, this would be reviewed in the environmental mitigation part of the permit or order application.

Table 3.7 Summary of drought permit, ordinary drought order and emergency drought orders.

	Drought permit	Ordinary drought order	Emergency drought order
Legislation	WRA 1991 Section 79a	WRA 1991 Section 74	WRA 1991 Section 75
Applicant	Water company	Water company or Environment Agency	Water company or Environment Agency
Authorised by	Environment Agency	Secretary of State	Secretary of State
Powers	To modify or suspend conditions on an abstraction in order to increase water supply during a drought	Can increase supply and restrict non-essential use of water trough a NEUB. This is over and above TUBs	To restrict supply by use of rota cuts
Duration	Up to 6 months	Up to 6 months	Up to 3 months
Extensions	For a further 6 months	For a further 6 months	For a further 2 months
Period of powers to be granted	Normally within 12 days from date of application	Normally made within 28 days from date of application	Normally made within 28 days from date of application

3.2.7.1 Drought permits

In accordance with the Water Act 2003, we have identified possible drought permits that we would seek to secure additional supplies during a drought. Drought permits are required when a change in an abstraction licence is required. Figure 3.6 shows the drought permit locations and Table 3.8 provides a summary of the proposed drought permits and the maximum possible benefit. The benefit does not reflect a benefit to deployable output but instead the increased temporary and localised availability of raw water resources.

Figure 3.6 Drought permit locations and associated sources

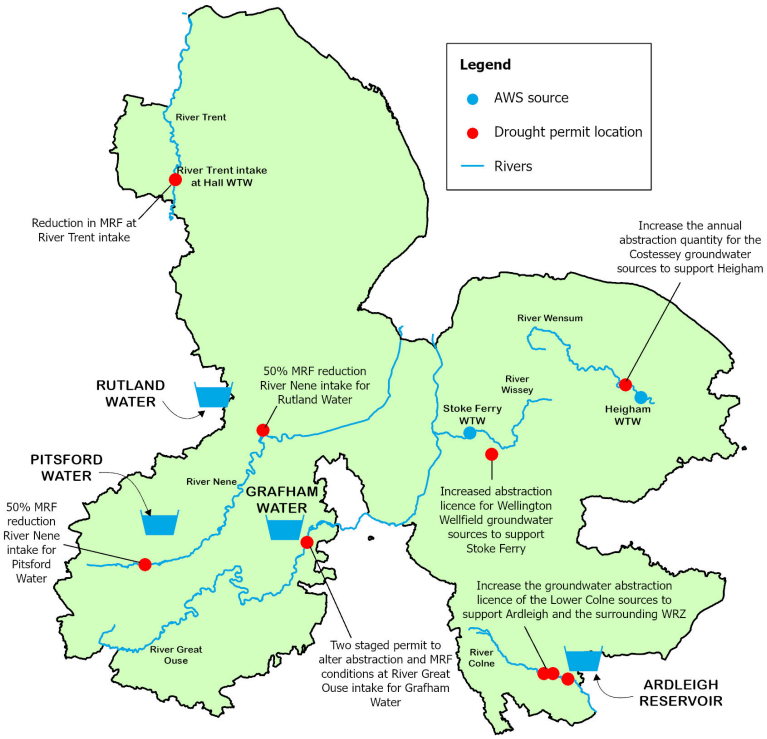


Table 3.8 Drought permit summary and maximum benefit

Drought permit	Description	Maximum benefit (Ml/d)
Lower Colne (Ardleigh Reservoir)	Increase the abstraction licence(s) to allow additional augmentation from Balkerne and supply system support from Aldham and Cooks Mill	7
Costessey (Heigham WTW)	Increase abstraction licence(s) to allow additional support from Costessey groundwater sources	24
Wellington Wellfield (Stoke Ferry and Marham WTW)	Increased abstraction licence(s) to allow additional support from Wellington Wellfield and Denton Lodge.	15
River Gt Ouse (Grafham Water)	Two staged permit to alter the abstraction licence condition(s) allowing abstraction at Offord to continue at lower flows.	68
River Nene (Rutland Water)	Alter abstraction licence to allow a 50% reduction in the MRF at Wansford	75
River Nene (Pitsford Water)	Alter abstraction licence to allow a 50% reduction in the MRF at Duston Mill	17
River Trent (Hall WTW)	Alter abstraction licence to allow a reduction in the MRF at Hall.	40

All drought permits are included as options in WRMP24, but they are currently not required within the baseline to balance supply-demand. However, this doesn't mean that the drought permits will only be required in a greater than 1 in 200-year drought event as it is not possible to determine the severity of the current drought being experienced until after it is over so implementation would have to be considered before this point in order to protect from the risk of a serious deficiency of public water supplies.

The drought permits that support Rutland Water and Pitsford Water would operate in the same river and hydrological catchment and therefore we would look to group any applications for these sources to ensure the process is as efficient as possible as well as to ensure that any cumulative impacts are taken into account. However, in the majority of cases there is not a prepared sequence of application for the permits, and they would be applied for based on the needs of the reservoir storage or wider drought and environmental concerns at the time. The Environmental Assessment Reports (EARs) for each permit would also be taken into account when determining prioritisation of actions. Further information on being drought permit application ready is included in **Appendix 6.**

All our drought permits have an associated Environmental Assessment Report (EAR) which reviews the potential environmental impact and suggests monitoring or mitigation that may be required. We have improved and updated assessments of the environmental impacts relating to each of the individual drought permits, and a summary of the assessments and proposed monitoring and mitigation is presented in **Appendix 6**. We have been completing these assessments in close liaison with the Environment Agency, Natural England and Historic England, to ensure environmental impacts are fully identified and assessed. Further information on the environmental assessment process is included in **Section 3.7**.

Where possible, implementation of drought permits will be carried out during the winter to:

- Reduce the risks of drought permits or drought orders in the following summer
- Assist recovery of water resources that have been depleted as a result of drought
- Assist the maintenance of water supply in drought affected areas
- Reduce the risk of environmental impact

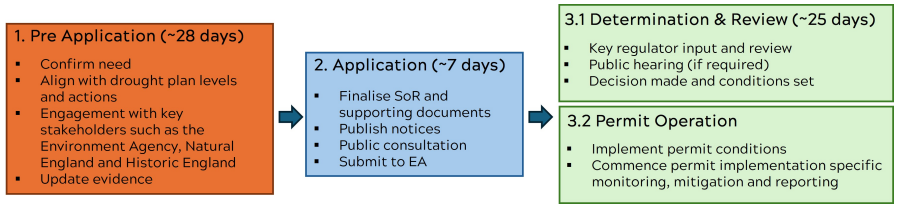
Any winter drought permit application must still satisfy the criteria for drought permits and must be applicable to circumstances where a threat to public supplies is significantly greater than the normal risk to supplies for the time of year. However, applications during winter might occur ahead of the drought level curves normally assigned to drought permit actions.

Drought permits must be approved by the Environment Agency. Any drought permit application we submit will be fully aligned with the requirements and will only be granted when the Environment Agency is satisfied with appropriate evidence that there is a serious deficiency of supplies of water in a given area due to an exceptional shortage of rain. During the application process we will also work Natural England and Historic England.

In line with the guidance, we have prepared templates to ensure we are 'application ready' for all our permits, should we need to apply for one. A summary of what is included within these templates is shown in **Appendix 6**.

To give us time to create and apply for the permit we have developed application triggers for each of the permits, to reflect the likely 60-day application time and ensure we apply for any permit in a timely fashion. The wider drought level structure has also been developed to allow time for previous actions (e.g. demand actions) to have a meaningful impact. Examples of these levels have been presented in **Section 2.3**, with further information in **Appendix 3**. **Appendix 6** describes the application process which is summarised in Figure 3.7

Figure 3.7 Example drought permit application stages and timeline



3.2.7.2 Drought orders

If environmental assessments indicate that the impacts of a permit may be more significant during the summer, and there is uncertainty about whether the proposed monitoring and mitigation will sufficiently minimise those impacts, the Environment Agency and Natural England may advise applying to the Secretary of State for a drought order.

In addition to the existing permit options, the Environment Agency also has a potential drought order that would increase the TWAS transfer to support our abstraction on the River Ancholme at Cadney. This would only be required in extreme drought scenarios, but we would work closely and proactively with the Environment Agency if it appeared likely that the option may be needed.

3.3 Extreme Drought Actions

As part of our continued long-term water resource and drought planning, we are exploring the feasibility of additional demand- and supply-side actions that we may need in future should a more severe drought occur. These additional actions are known as extreme actions and have been updated following Drought Plan 2022, taking into account information recently gathered.

We have generated a suite of possible extreme demand- and supply-side actions that could be implemented during a Level 3b scenario, examples include:

- Extreme pressure management
- Advanced water recycling
- Resource trading and transfers
- Utilising other significant water bodies
- Recommissioning / Commissioning out-of-service sources

Extreme actions are to be used as "more before 4" measures which means that they will be applied to try and mitigate the need for Level 4 actions such as rota cuts. If the situation continues to deteriorate through Level 3b, then we will refer to our Emergency Drought Plan which covers Level 4.

Actions identified, have been assessed as being realistic and technically feasible. As part of the assessment the four key criteria provided in the Environment Agency Drought Plan guidelines have been used:

- Include triggers with realistic lead-in times
- Be practical to implement
- Be likely to be temporary
- Generally not result in permanent increases to Deployable Output (DO) i.e. usually distinct from a WRMP option

We will always prioritise the use of demand actions first before supply actions are implemented. However, due to the variability of a drought, and the changing intricacies of each WRZ, the exact order and prioritisation of the implementation of extreme actions will be reviewed on a case-by-case basis to determine what strategy is the most beneficial to a specific WRZ during a given scenario. This review will be carried out by subject matter experts within the DMT and will identify more precisely the possible quantitative benefits, as well as any environmental impacts, and barriers to implementation. Actions that are least environmentally damaging and implementation ready will prioritised ahead of others.

For all extreme actions identified we would ensure compliance with the relevant water quality regulations and that any impacts to customers (including acceptability of water) are fully assessed and managed. Due to the characteristics of the Anglian Water region, we are able to identify a potential oncoming drought at an early stage, allowing for planning time. This time also allows us to discuss our plans with the Environment Agency, Natural England, Historic England and other key stakeholders, including the Drinking Water Inspectorate where appropriate.

The potential environmental effects of each action listed in the Extreme Actions table in **Appendix 7** are assessed as part of our SEA. Within the SEA framework, the extreme actions are treated as a distinct tier of drought actions, reflecting their deployment only under the most severe and prolonged drought conditions. Their assessment therefore focuses on the potential scale and intensity of effects, reflecting the exceptional circumstances in which they may be used. To ensure a consistent approach, the SEA applies the same appraisal framework to the extreme actions as to all other drought actions to allow for comparative assessment to support decision-making. Importantly, the SEA includes a residual effects matrix, which records the likely significant effects after the application of appropriate mitigation and best practice measures.

Environmental monitoring and associated timeframes will be considered for each action as options are developed into specific operational measures. Extreme actions will continue to be reviewed through the SEA process, alongside further work on prioritisation of actions, taking into account operational constraints, SEA findings and customer preferences.

Further information including the full list of identified extreme actions can be found in **Appendix 7**.

3.4 Emergency Planning and the Emergency Drought Plan

3.4.1 Emergency Planning

Anglian Water has a statutory obligation to protect essential services, including during drought. The Emergency Planning team ensures compliance with the Security and Emergency Measures Direction 2022 (SEMD) and 2024 amendment.

The SEMD sets out what water companies must do to plan for and respond to emergencies or incidents. The plans must be well documented and exercised so that they are ready to be activated as well as taking into account longer terms risks such as extreme weather events. Our plans include information on:

- Alternative water provisions to meet our worst-case scenario of 1.5% of our domestic population impacted by a loss of supply or a supply interruption. And to provide 10 litres of water per person from days 1 to 5 of a loss of supply or supply interruption and offer 20 litres per person from day 6.
- Vulnerable customer support and response during incidents, with priority given to the provision of alternative water for the most vulnerable and water dependent customers.
- Vulnerable sites support and response during incidents (a vulnerable site is a site occupied by vulnerable people, hospitals, prisons, care homes, schools).
- Vulnerable non-household support for CNI sites as identified by Defra.
- Communication plans to customers, government, Ministers, MP's, Regulators, Local Resilience Forums, media, etc.

The 2022-23 and 2025 prolonged dry weather events demonstrated that drought conditions increasingly coincide with other climate-related risks such as heatwaves, high demand and localised supply interruptions. As a result, the interface between drought management and the Emergency Planning team has been strengthened to ensure a more integrated approach to multi-hazard events.

The Emergency Planning team are involved throughout our drought management structure and as drought intensifies their role strengthens. The DMT may call upon the Emergency Planning team where drought conditions interact with wider resilience risks, ensuring that drought management is embedded within the broader Anglian Water emergency planning framework.

Often linked with Emergency Planning is the potential support provided to those people, businesses and farms, that rely on their own water sources (e.g. those with private water supplies). The responsibility for maintaining, managing, operating and ensuring the resilience of these supplies sits with the owners of the private water supply and the associated local authority. However, we do understand that

private supplies can fail so we work closely with local authorities, local resilience forums, the Environment Agency and Drinking Water Inspectorate to provide support for essential services when we are able to. We provide any support on a best endeavours basis and cannot always guarantee that we will always be able to help.

3.4.2 Emergency Drought Plan

The Emergency Planning and Water Resources teams are currently working on updating the aforementioned emergency plans to include an Emergency Drought Plan (EDP). The EDP will meet paragraph 4(1) of the SEMD 2022 and 2024 amendment.

The EDP for Anglian Water operates outside the statutory Drought Plan and covers the actions we will take for droughts which are beyond the levels of service that we have planned for in WRMP24. While the Drought Plan is managed by our Water Resources and Operational teams, the EDP is led by our Emergency Planning team.

The EDP sets out the full suite of possible Level 4 actions (such as rota cuts and large-scale loss-of-supply arrangements) which may require early preparation during the more severe stages of the drought management framework. Due to our existing emergency plans and the strong links between our DMT and Emergency Planning teams this puts us in a good position to implement Level 4 actions if required.

To ensure that the movement between the Drought Plan and the EDP is smooth from both an action preparation and implementation and communication perspective our EDP will include triggers setting out when each type of activity needs to begin. However, at a minimum this will begin when an area of our region reaches Level 3 drought status as it is important to get the interface right between extreme actions in the Drought Plan and emergency actions in the EDP. Communications will also be especially important and will continue throughout the drought levels with communications provided to the key stakeholders referenced in **Section 3.4.1**, about when the EDP will need to be implemented using Level 3 as a guide.

Unlike the Drought Plan, our Emergency Drought Plan is not available in the public domain due to the security requirements associated with the content included e.g. types of actions and stakeholder and customer type information. However, we are working closely with Defra and the Environment Agency to develop the guidelines from which our EDP will align with. We will also ensure that our EDP is developed with key stakeholders in mind.

3.5 Drought Recovery and Post Drought Actions

Once water resource conditions begin to improve, we will work closely with the Environment Agency to determine when the risks to public water supply and the environment have returned to levels consistent with a normal year. A drought will only be considered to have ended once the indicators referenced in **Section 2.3.4**. have been sustained for an appropriate period.

Throughout the recovery process we will amend our drought level status to move backwards through the levels (e.g. drought level 2 to drought level 1) as our resource indicators recover back above the different drought levels. Our level status is communicated through a variety of channels which encompass all key stakeholders such as our website, National Drought Group, MOSL's drought map and meetings with NAVs.

Our drought actions such as restrictions will be lifted once indicators have recovered to 'normal' levels. Where supply actions were taken, we will continue environmental monitoring for as long as necessary to understand the recovery of potentially impacted habitats and water bodies. Decisions to stop key actions will be taken by the DMT and then communicated to customers and stakeholders when required through the channels and processes described in our communications plan (**Appendix 8**).

In order to review our performance during a public water supply drought event we will endeavour to carry out a lessons learned activity within six months of the return to normal conditions, led by the DMT and water resources team. Within a year after this activity has finished our aim would be to share evidence explaining how the recommendations have been implemented. The lessons learned would cover all drought stages, from the onset, during a drought and directly after a drought. If environmental droughts occur within our region, we would carry out an internal review of our response and collaborate with regulators and stakeholders if required.

A wide range of topics would be examined in our lessons learned reviews. A summary of topics is set out below:

- The effectiveness of our drought indicators and level, the timing and suitability of the actions we implemented, and the performance of our internal decision-making processes.
- The effectiveness of our communication campaigns, leakage management and operational response, as well as how well we collaborated with neighbouring companies, NAVs, retailers and regional groups.

- Analysis of the demand reductions achieved during the drought and consider whether any changes are required to our demand forecasts or longer-term demand management strategy.
- The performance of individual sources, including whether yields require reassessment or whether investment is needed to maintain or improve resilience.
- How effectively we shared information with regulators and national groups and how well this supported coordinated drought management.
- How we will inform reviews carried out by national groups, regulatory bodies and regional water resources groups, where appropriate.
- Environmental impacts will be evaluated using baseline, in-drought and post-drought monitoring data, and we will consider whether our monitoring was sufficient to assess the effects of any drought permits or supply-side actions.
- Performance of mitigation measures reviewed as well as identification of any improvements needed for future events.

More information on environmental monitoring and mitigation in relation to drought permits can be found in **Appendix 6**.

Alongside lessons learned reviews, drought exercises are also a great way of testing drought plan levels, actions and management structures during and outside of drought. Exercises can be carried out either internally or externally, as well as being desk based or field based. Our aim is to complete a drought exercise every year, but this will be dictated by the water resources situation.

If appropriate, the findings of the internal lessons learned reports and internal reviews will be used to update our Drought Plan, WRMP and operational procedures. This will include consideration of any changes required to levels of service, the potential need for new drought permits or orders, and any implications for wider programmes such as the Water Industry National Environment Programme or River Basin Management Plans. We will also assess whether the drought has changed our understanding of long-term drought risk and whether further resilience improvements are required. An action plan will be developed to set out the changes we intend to make and the timescales for delivering them, and progress will be reported through our annual drought health check. Updates to the WRMP will be made through the annual review process. Where appropriate, we will consider how best to communicate any significant changes to customers, neighbouring water companies, retailers, NAVs and regional groups.

We also attended and were active contributors in lessons learned workshops held by the National Drought Group following 2022 and 2025. These workshops led to a number of recommendations which the Environment Agency, water companies and other key stakeholders have worked to embed within drought management going forward. Therefore, improvements to our drought response and management is guided by both internal and external engagement.

Through this process, we will ensure that each drought provides valuable insight to strengthen our resilience, improve our operational response and enhance the protection of the environment in future events. Some examples of our findings from previous dry weather and drought events are included in **Appendix 9**.

3.6 Alternative pathways

Part 2 and Part 3 of our Drought Plan set out how we monitor the development of dry weather and drought as well as the actions we put in place to mitigate the impacts of these conditions. We are confident that our drought management strategies will work effectively at all levels of drought but naturally as the severity of drought increases the number of unknowns is likely to increase - mainly due to lack of historical experience of severe and extreme droughts and the ability for models to capture all eventualities.

We carry out scenario testing (**Appendix 3**) to help us understand how our systems might react to different events and the benefits that our actions could provide. However, there may be cases where we need to move to more extreme actions, and this is where the benefit of implementing alternative pathways within scenario testing can become useful. This benefit is similar to what is seen in our WRMP24 which includes an adaptive planning assessment. This assessment considers adaptive pathways in case there are issues with delivering options in the core pathway and therefore the approach needs to pivot to continue meeting supply-demand balance. One of the examples included in WRMP24 shows how if the Fens Reservoir was delivered late then another option such as Bacton desalination plant could start to be developed and therefore delivered early to meet environmental commitments.

3.6.1 Grafham Water Alternative Pathway Example

We have applied the alternative pathway methodology to our reference drought (1 in 200-year event) at Grafham Water to test how we might need to respond.

During an extreme drought event, a large reservoir such as Grafham Water may take longer than usual to recover, creating a risk that the reservoir reaches extremely low levels. Our alternative pathway modelled scenario sets out how the reservoir level might react if:

- No actions are implemented
- Benefits from standard actions are included such as demand restrictions (TUBs) and the drought permit
- Benefits from more extreme actions are included to (1) prevent reservoir levels from dropping as low, and (2) support recovery following an extreme drought

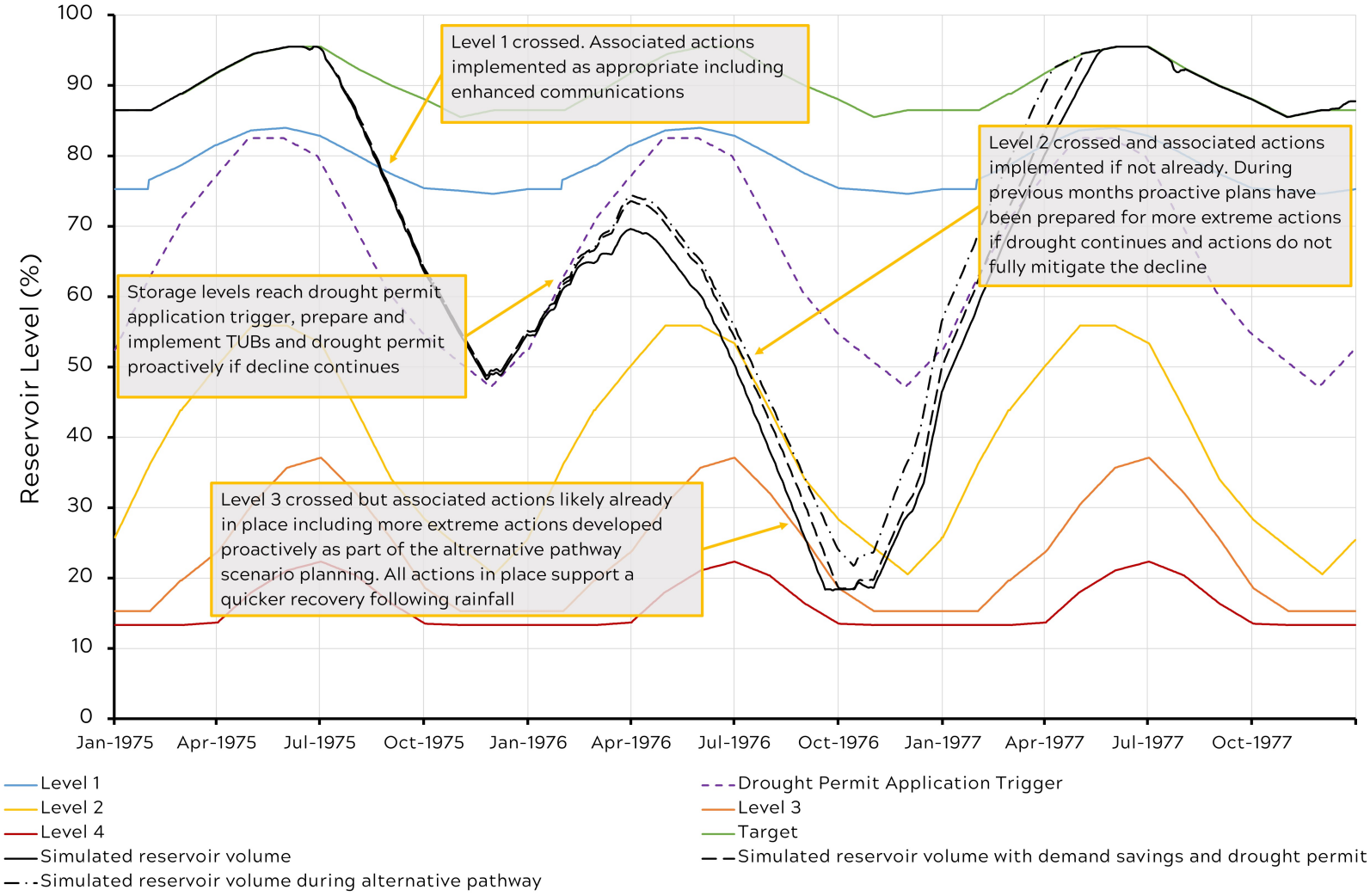
The more extreme actions that have been included to reduce the output of Grafham WTW to slow reservoir decline and speed up reservoir refill are:

1. **A range of extreme demand management actions:** We would implement extreme communication and water efficiency plans, as well as extreme targeted pressure and leakage management.
2. **Increasing internal transfers:** We would increase our support to the Grafham supply system by transferring all available water from the wider Ruthamford supply system.
3. **Reducing external transfers:** We would work with Affinity Water to reduce the amount of water they require from Grafham WTW, which could be achieved by Affinity Water utilising alternative sources and implementing extreme demand management actions set out in their Drought Plan.
4. **Accelerating supply schemes:** Introducing Clapham WTW back into supply at its design capacity ahead of schedule in 2030 to work conjunctively with Grafham WTW.

Despite these actions being classed as “extreme actions” and therefore normally attributed to being implemented at drought level 3, planning at a reservoir that is as strategically important as Grafham Water would occur following the first exceptionally dry year which in this scenario dropped reservoir levels to 50%. This means that if winter recharge is not sufficient and / or another exceptionally dry year is experienced these actions could be proactively introduced at the appropriate point after Level 2 has been crossed.

Figure 3.8 shows the various scenarios referenced above as well as the benefits to the reservoir level that the alternative scenario introduce. It might not seem like there is much benefit being achieved from each action, but this must be put into context of the size of Grafham Water and therefore any benefit that is introduced brings us one step closer to ensuring the supply from this source. It is also noted that the reservoir recovers fully in the third year of the scenario regardless of whether actions are in place or not but it is important to remember that during the actual event we would not know what the future holds in regard to rainfall and the amount of water available for abstraction.

Figure 3.8 An example of alternative pathways and actions taken at Grafham Water during a modelled 1 in 200-year drought



3.7 Environmental Assessments

An important part of the drought planning process is to ensure that the environmental impacts of any of the drought actions that we propose are appropriately assessed and minimised.

In accordance with the Environment Agency's guidelines an Environmental Assessment Report (EAR) has been prepared for each drought-related supply action where we consider that there may be a requirement to apply for a drought permit. All EARs have been updated since Drought Plan 2022, and the revisions have been informed throughout by ongoing engagement with the Environment Agency, Natural England and Historic England.

Each EAR follows a consistent, structured assessment process that includes:

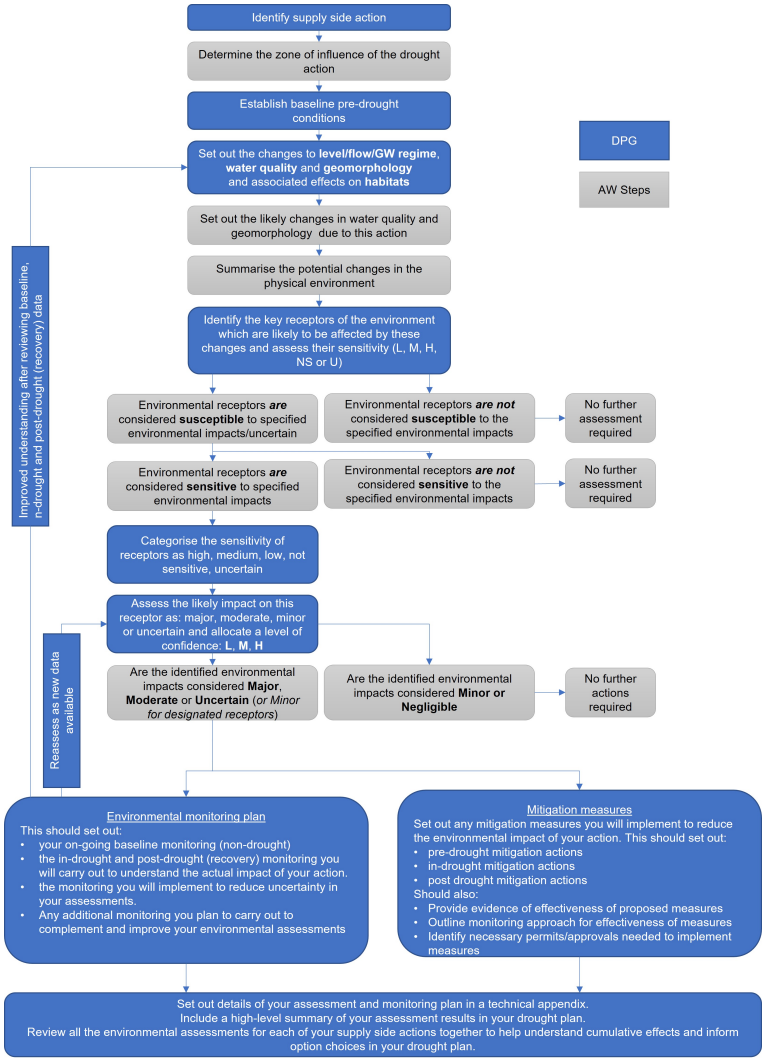
- Assessment of physical environmental impacts, including hydrology, water quality, geomorphology and existing environmental pressures
- Assessment of ecological, habitat and wider environmental receptors
- Development of monitoring and mitigation measures for baseline, during-drought and post-drought periods
- Habitat Regulations Assessment screening and, where necessary, completion of an Appropriate Assessment

The EARs consider the environmental sensitivity of the affected catchments, the potential impacts associated with each drought permit action, and compliance with relevant environmental legislation, including the The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 and the Conservation of Habitats and Species Regulations 2019 (Habitats Regulations). They also set out the monitoring and mitigation measures required to safeguard the environment before, during and after the implementation of a drought permit.

Seven sources have been identified where additional abstraction in the form of a drought permit may be required during drought conditions, and these are summarised in Table 3.8 A summary of the environmental assessments is also provided in **Appendix 6**. Full environmental assessments have been completed for each permit identified and are available upon request.

In accordance with the Environment Agency's guidelines the assessment process includes the following stages (Figure 3.9).

Figure 3.9 Approach to environmental assessment



3.7.1 Environmental monitoring plan

The environmental monitoring plan (EMP) brings together the findings of the EARs for potential drought permit sites and sets out how environmental conditions will be monitored and protected throughout a drought. We intend to undertake proactive monitoring and mitigation, supported by reactive measures where required. The EMP outlines routine baseline monitoring, additional monitoring during dry weather and drought, monitoring during permit implementation, and recovery monitoring once the permit ends. It also identifies mitigation measures to avoid, reduce or compensate for environmental impacts associated with drought permit actions. The EMP recognises the need to distinguish natural drought effects from those caused by drought management measures and considers the timing, availability and reliability of data as conditions evolve. A summary of the EMPs is provided in **Appendix 6**.

3.7.2 Water Framework Directive (WFD) assessment

We have undertaken WFD assessments for all our supply-side actions that require a drought permit application. The WFD assessments are included in the EARs, and review the potential effects on River Basin Management Plan (RBMP) objectives or waterbody status.

WRMP24 reviewed how WFD requirements may constrain abstraction from existing sources over the coming planning period. While some constraints were identified, particularly for groundwater sources, WRMP24 sets out the options and investment needed to address any resulting deficits. In addition, there is a no deterioration modelling exercise ongoing with the Environment Agency to determine the level of risk associated with our abstractions until 2036. Overall, we do not consider there to be potential impact with respect to how our abstractions are considered in Drought Plan 2027.

3.7.3 Habitats Regulations Assessment (HRA)

The Habitats Regulations require any plan that may have a likely significant effect on a Habitats Site to be assessed in view of that site's conservation objectives. The HRA assesses whether any element of Drought Plan 2027 could affect internationally designated nature conservation sites.

The HRA covers all drought management actions in Drought Plan 2027 and considers their potential effects on Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites. Where likely significant effects (LSE) cannot be ruled out, the process moves to Appropriate Assessment (AA) to identify if any elements of the Drought Plan 2027 either alone or in-combination with other plans and projects would result in Adverse Effects on the Integrity (AEoI) of any Habitats Sites. If AEoI could not be ruled out, mitigation measures are proposed.

The HRA concludes that, with the identified mitigation in place, no AEoI of any Habitats Site would occur, as a result of Drought Plan 2027 either alone or in-combination with other plans or projects and therefore no further HRA stages are required. Full details are provided in the HRA report.

3.7.4 Strategic Environment Assessment (SEA)

The SEA has been undertaken in accordance with the SEA Regulations and provides an appraisal of the environmental effects of Drought Plan 2027. Screening confirmed that a full SEA was required, leading to a Scoping Report that defined the environmental baseline, key issues and assessment framework. The Scoping Report was issued for statutory consultation between December 2024 and January 2025 to the Environment Agency, Natural England and Historic England, and their feedback has been incorporated into the SEA Environmental Report.

The SEA assesses the drought management actions in the Plan, considering potential residual effects across topics including biodiversity, water, soil, material assets and resource use, air, climate, landscape and visual amenity, cultural heritage, and population and human health. It evaluates individual and cumulative effects and identifies mitigation to reduce adverse impacts. This ensures environmental considerations are integrated into Drought Plan 2027 and that the Plan aligns with statutory requirements and good practice.

Overall, demand actions reduce pressure on water resources with low environmental impact, delivering benefits through reduced abstraction and improved drought resilience, though some adverse effects may occur for users subject to restrictions. Standard supply actions rely on existing licences and infrastructure and support system efficiency and resilience, with predominantly negligible to minor, temporary adverse effects. For drought permit actions, the assessment identified environmental risks for surface and groundwater systems, with some actions interacting more strongly with sensitive receptors. Most adverse effects arise from secondary changes linked to increased abstraction, such as lower flows, altered habitats or temporary water-quality shifts, and mitigation has been developed to reduce these impacts.

Full details are provided in the SEA report.

4. Part Four - Drought Management and Communications

Part Four of our draft Drought Plan 2027 focuses on the structure and communications plan that Anglian Water puts into place to manage dry weather and drought.

4.1 Drought Management Structure

Effective drought management requires clear governance, timely decision-making and coordinated action across the business. It is important that we have transparent escalation processes, defined responsibilities, and strong communication with regulators, customers and stakeholders.

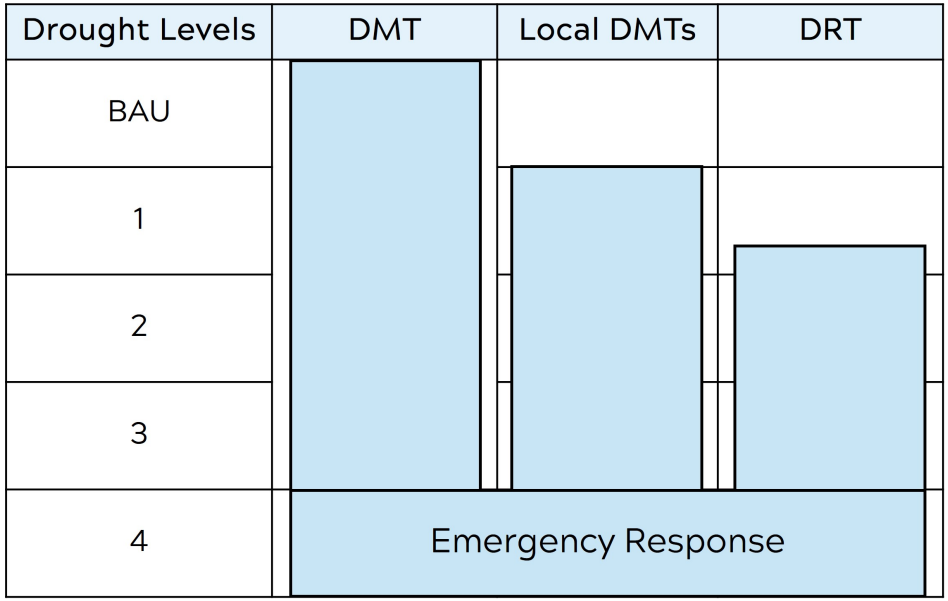
The Anglian Water drought management structure reflects these requirements and incorporates learning from previous dry weather events (particularly 2011-12, 2022-23 and 2025) which highlighted the value of early mobilisation, clearer separation of strategic and tactical roles, and stronger environmental and customer-focused decision-making.

In 2022, the Water Services directorate made the decision to split the Water Resources team into two separate functions, the two new teams are Water Resources and Drought (WR&D) and Strategic Asset Planning (SAP). The WR&D team leads the creation of the statutory Drought Plan, ensures the Drought Plan is followed, undertakes continuous monitoring and forecasting, and coordinates the operational response to dry weather and drought. The WR&D team also maintains proactive engagement with internal and external stakeholders and works closely with colleagues across the business including the SAP team, who are responsible for long-term water resource planning and the Water Resources Management Plan (WRMP).

One of the main drivers behind the creation of the WR&D team was the need to create a permanent function that focused on tracking, managing and responding to drought in the Anglian region. This resulted in the creation of a full-time resourced Drought team within the WR&D team. The Drought Team monitors the water resources position at all times. As part of the response to drought, the Drought team would also support with the management of the Drought Management Team (DMT), local tactical focused DMTs (Local DMTs) and the Drought Response Team (DRT), which can have both a strategic and tactical response.

Figure 4.1 shows the different drought management groups at Anglian Water and illustrates what drought level they would likely be stood up in. These step changes are just used as a guideline and the management response remains flexible in order to proactively manage any situation.

Figure 4.1 The Anglian Water drought management groups and the drought levels they would likely be initiated



4.1.1 Drought Management Team (DMT)

The DMT is responsible for making key business decisions that may be required as a direct result of the impact of dry weather and drought.

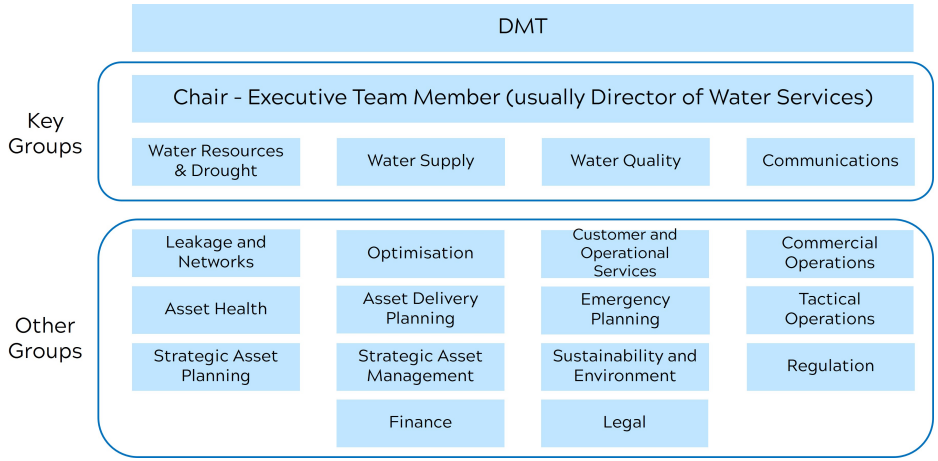
Experience from 2022-23 demonstrated the importance of maintaining organisational readiness, even outside of drought periods. As a result, during BAU conditions, Anglian Water now holds twice-yearly DMT meetings in the spring and autumn. These sessions review seasonal risk, assess drought levels, and ensure operational and communication plans remain up to date.

Early activation of DMT allows early governance mobilisation and enables timelier and coordinated action across the business. The frequency of DMT meetings from Level 1 onwards increase to monthly and can escalate further if the Chair decides.

The DMT is chaired by an Executive Team member (usually the Director of Water Services) and includes senior representatives from around the business. A technical secretary maintains records of all meetings and decisions. The management structure covers all key areas of the business with the ability to pull in expertise from wider groups depending on the risk being faced. Each member is experienced in drought management as this enables us to respond to the onset and development of a drought in an effective and responsible way.

Figure 4.2 shows the areas of the business that feed into DMT as appropriate to the situation.

Figure 4.2 A summary of the groups that feed into the DMT as appropriate to the situation



DMT escalates up to the Executive Committee, Anglian Water Group Board and Anglian Water Services Board, which shows that our Executive Committee and Board are engaged during drought. To be able to implement actions such as customer restrictions (e.g. TUBs) or drought permits the DMT chair will follow the Anglian Water Scheme of Delegation and liaise with the Anglian Water Services Board and Anglian Water Group Board to gain the appropriate authority on critical drought decisions.

Table 4.1 includes a brief summary of the responsibilities of each of the key groups within DMT.

Table 4.1 Responsibilities of the key groups in DMT

Group	Responsibility Summary
Executive Team Member (normally Director of Water Services) - DMT Chair	Strategic leadership; approves drought actions; ensures regulatory compliance; oversees company-wide response.
Water Resources & Drought	Leads drought monitoring and forecasting; advises on actions; coordinates drought planning; provides technical input to DMT.
Water Supply	Oversees operational response; manages supply schemes; ensures asset readiness; reports operational risks.
Water Quality	Leads on water quality monitoring, advises on water quality regulator policy and guidance.
Communications	Leads drought communications; ensures consistent messaging; delivers customer behaviour change campaigns; liaises with media.

The DMT provides strategic oversight and is responsible for:

- Ensuring compliance with regulatory expectations
- Coordinating cross-company resources and prioritisation
- Assessing drought severity and agreeing escalation or de-escalation of our response
- Approving drought actions (demand and supply)
- Ensuring environmental risks are assessed and mitigated
- Overseeing customer and stakeholder communications

The DMT may establish sub-groups to deliver specific drought actions or manage drought risks, for example, asset health, water quality, demand management, or supply scheme delivery. This reflects learning from previous droughts where specialist workstreams enabled faster and more effective delivery.

DMT includes a communications lead responsible for coordinating drought messaging. Learning from 2022-23 showed that early, consistent and transparent communication is essential for building trust and encouraging water-saving behaviours. The updated Communications Plan in **Section 4.2** reflects this approach.

During dry weather and drought events other established Anglian Water strategy steering groups will likely be meeting at the same time e.g. Demand Management Strategy Group. Therefore, we ensure there continues to be alignment across all company workstreams so that all business priorities are effectively addressed.

4.1.2 Local DMTs

Learning from 2022-23 and 2025 showed that having hyper-localised DMT groups provided clearer oversight on the situation within each of the areas that are being affected by the drought. These Local DMTs involve the operational teams with local knowledge. Opportunities and risks identified by the Local DMTs are escalated back to DMT to support timely response.

4.1.3 Drought Response Team (DRT)

If drought escalates to Level 2 and onwards experience from the 2011-12 drought highlighted the importance of creating a central team with dedicated resources to help coordinate the drought response in addition to the DMT.

The Drought Response Team (DRT) is a tactical group that is activated by the DMT when drought conditions are beginning to escalate, or when tactical coordination or a specific exploration is required. The DRT reports back to the DMT. The DRT is in addition to the full time Drought Team who are monitoring the ongoing water resources position at all times.

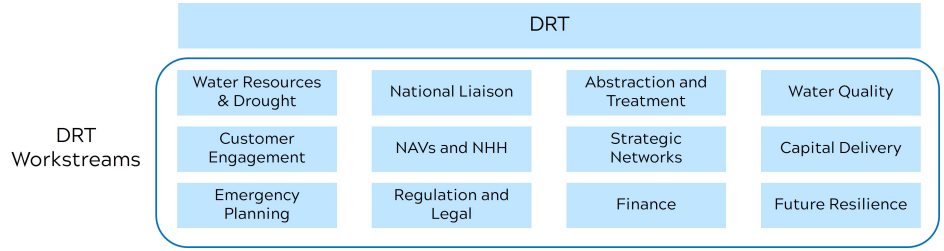
The dry weather events in 2022-23 and 2025 showed there was also a need for a strategic DRT (Drought Response Strategy Team, DRST) to start ahead of the main tactical DRT to enable clearer accountability and faster operational delivery. DMT may choose to stand up DRST as the drought escalates towards Level 2.

The DRST can be stood up to enable greater focus on drought preparedness and response at a strategic level. This enables a route for key DMT directed strategic decisions to be actioned or explored before a drought increases in severity and supports a proactive approach to ensure preparedness activities are undertaken.

Depending on the severity of the drought, the DMT may choose to stand up the full tactical DRT during Level 2 with subject matter experts seconded from across the business. The DRT is an organisational drought-based incident response structure. The DRT incident response structure would align and link in with the Operational Incident Response teams that manage the company through other events such as high demand or heatwaves, recognising that heat-related risks may occur independently of drought.

Resources for DRT will be made available as drought conditions develop. The DRT is led by a senior manager (Head of DRT) who is specifically appointed, they would have responsibility for coordinating the various subject matter experts and multiple activities being carried out across the business, reporting directly to the DMT. An example of some of the workstreams that could make up the DRT are shown in Figure 4.3.

Figure 4.3 Example workstreams that could feed into the DRT



The DRT membership would depend on the nature of the drought event and the response or investigation required. The purpose of the DRT is to make sure that we can continue to deliver excellent service to our customers, and protect the environment.

In summary when the DRT is stood up it will:

- Coordinate day-to-day drought actions
- Provides operational intelligence to the DMT
- Oversees delivery of demand and supply actions
- Monitors environmental impacts and mitigation
- Ensures consistent customer and operational messaging

If it appeared likely that the drought situation was to escalate to Drought Level 4 then the DRT would liaise with the Emergency Planning team and the drought response would move into being covered by our Emergency Drought Plan in **Section 3.5.**

4.1.4 External Drought Management

Anglian Water maintains close collaboration with regulators, neighbouring water companies and wider stakeholders throughout all stages of drought.

Learning from 2022-23 and 2025 reinforced the value of early and frequent engagement with the Environment Agency, Natural England, Historic England and neighbouring water companies. This ensures that environmental risks are understood early, regulatory expectations are met, and drought actions including communications are coordinated across catchments and regions.

External activities include:

- Liaison with local Environment Agency and Natural England teams on the water resources situation noting any risks or actions that may be needed based upon the forecast ahead.
- Agreeing water resources and drought reporting requirements with local and national Environment Agency teams.
- Consulting Environment Agency, Natural England, Historic England and other key stakeholders on drought permits and orders.
- Liaison with other water companies and key abstractors in the region through regional drought groups (e.g. WRE, WRSE and WReN), further information can be found in **Section 1.5.4.**
- We are keen to support other sectors wherever possible, e.g., agriculture and environmental groups, by discussing opportunities to increase drought resilience as well as investigating ways to share water when it is available. **Section 2.2.4** provides some examples of existing measures used to support other sectors.
- Maintaining clear, timely public communication throughout all drought stages

Further information on our communication plan and stakeholder management is detailed in **Section 4.2.**

4.1.5 Summer Demand

High summer demand and heatwave related impacts are managed outside of the drought planning process through established response and recovery plans for each supply area. These BAU activities will be undertaken in conjunction with a drought response.

The plans are designed to help aid decision-making during the summer months and are based on higher-than-normal water use, either due to a prolonged hot weather spell or an influx of holidaymakers to areas in our region. Each plan identifies the operational risks to an area and ensures that there are rezone and mitigation options to manage any water supply shortfall.

Summer demand plans are reviewed in full each year, often during the spring and autumn, led by the Emergency Planning team. There are also triggers that would lead to a plan being reviewed during other parts of the year such as actions or risks being noted during an event. These review meetings also serve as preparedness sessions to bring together a wide range of stakeholders, including representatives from Tactical Operations, Water Supply, Water Quality, Networks, Leakage, Optimisation, Asset Delivery Planning and Restoration.

4.2 Drought Communications Plan

Our drought communications plan outlines a flexible, multi-level strategy to manage and communicate dry weather and drought conditions. It details the communication strategies that would be implemented during BAU operations through escalating drought levels, aiming to influence customer behaviour, inform regulators, and engage key stakeholders to support water conservation and drought management efforts. We have continued to improve and evolve our plan using lessons learned from recent prolonged dry weather periods such as 2022 and 2025. The key elements to this are set out below with the full communications plan shown in **Appendix 8.**

We have ongoing engagement with our customers about the water resource challenges that our region faces and have developed our 'Love Every Drop' brand and purpose to raise awareness about the value of water. We want to get people thinking as responsibly about water as millions already do about recycling. One of our key 'Love Every Drop' goals is to increase customer awareness about the value of water in our region and to encourage water efficient attitudes and behaviours. It is important, via our continuum of communications on how to save water and be water efficient, that we reach as many of our customers as possible, through a range of channels. Accompanying the need to reach more people, is the addition of educating customers on why taking action it is important. Visibility is key, to be seen and heard landing what we have to say to ensure our customers understand how they can help.

However, in order to resonate and effect change our communications need to mean something too. We also acknowledge the repeatability and 'always on' drumbeat of our continued activity will mean we are more present in customers lives.

We consider the encouragement of 'water wise' behaviour to be a central theme to our demand management strategy. Our drought communications plan has been developed to be consistent with our 'Love Every Drop' campaign and our water efficiency framework as seen in **Figure 4.4.** It aims to provide a flexible framework of communications that will ensure effective and timely communications with regulators and customers during a range of scenarios and allows us to be responsive to individual drought characteristics.

Figure 4.4 Our water efficiency framework

Educate

Communicating the challenging water resources situation in our region as a result of climate change and growth alongside highlighting how we are working to futureproof water supplies and minimise waste.

Build intent

Develop customer understanding of the importance of individual action to reduce water consumption, growing motivation to change behaviours at home. Create a culture that values water as a precious resource to be preserved.

Behaviour change

Identify opportunities to create actual change that can support customers to use less water. Utilising both trusted and innovative devices to accelerate savings and compliment customer action.

Our communications activities are tailored to respond as required to a range of difference scenarios which are driven by the drought levels assigned to our water resources across the region. This means that the communications can be enhanced with further activity or by changing the tone to suit the severity of the drought as seen in (**Figure 4.5**). We would also be able to implement communications activities at a range of scales depending on the drought e.g. local hotspots, counties, WRZs or company-wide. There isn't a set scale at which communications would be implemented for each drought level but instead the best approach would be determined during the dry weather or drought event to ensure maximum effectiveness. Effective communications that engage customers in a timely manner are essential to reduce demand to conserve water for water supplies and to protect the environment during a drought.

As drought intensifies, we recognise that timely communications are key for effective consultation, advertising and encouragement of any demand restrictions, such as TUBs and NEUBs.**Section 3.1.2.1-3.1.2.2** and **Appendix 5** provide further detail on what restrictions are included in a TUB or NEUB as well as what the exceptions are.

Our communications plan isn't just focused on HH customers. It is important that it includes a wide range of different customers and stakeholders such as:

- Anglian Water employees
- Vulnerable institutions e.g. hospitals
- NAVs, retailers and NHH customers
- Media
- Regulators
- Regional groups
- Water UK, neighbouring water companies and other abstractors
- Government, MPs and local authorities
- Local Resilience Forums
- Local eNGOs

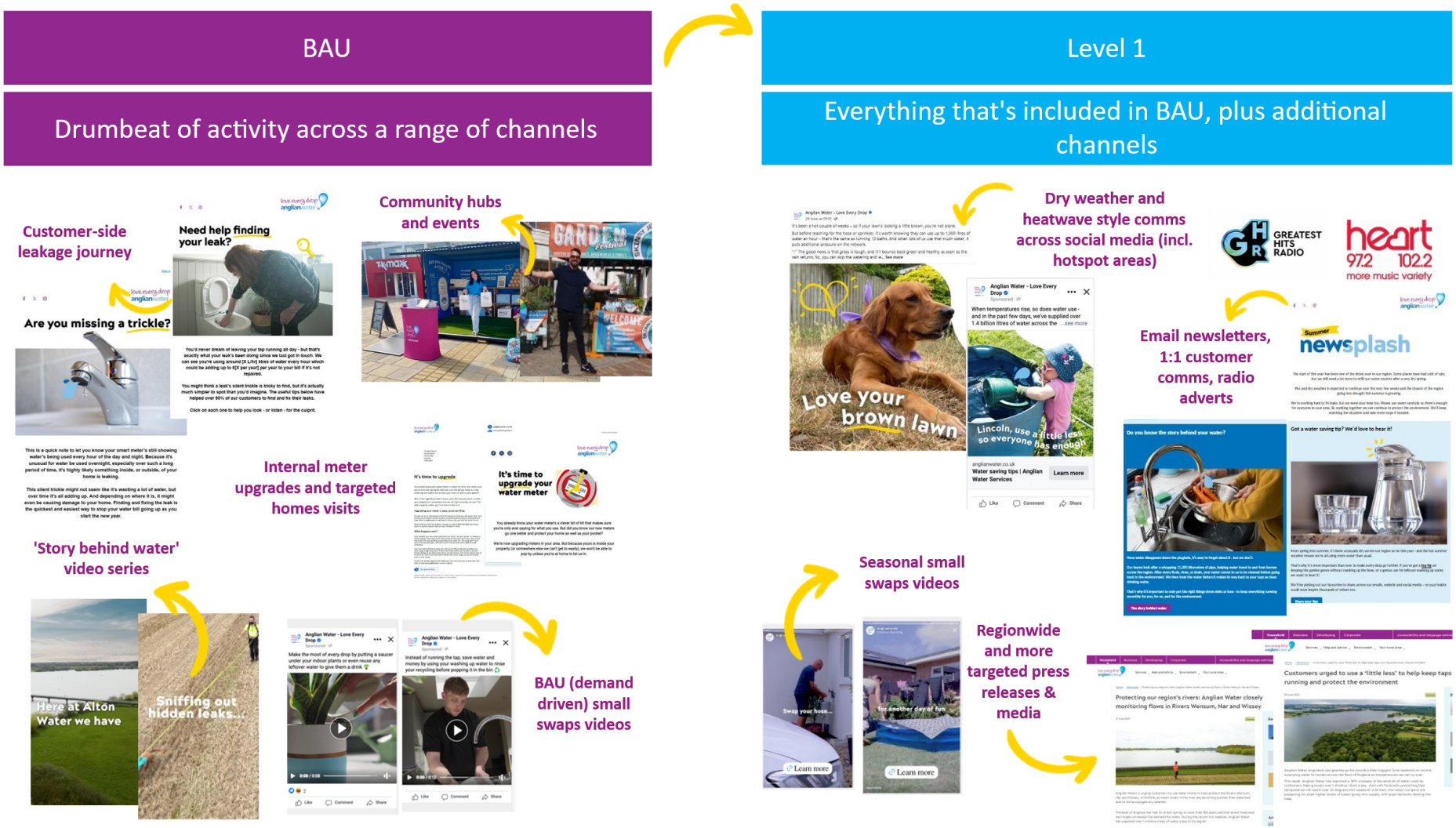
Anglian Water works with a large number of retailers and NAVs which offer valuable insights into their HH and NHH customers. We maintain consistent communication with retailers and NAVs throughout the year, ensuring strong points of contact and well-established business relationships. We will adopt a communications approach which is appropriate and relevant for the individual retailer and NAV, rather than adopting a one-size-fits-all approach. This is important because their customers will also pick up messaging from the broader media communications so messages must be aligned.

We also liaise with other stakeholders that would be creating communications content such as the Environment Agency and neighbouring water companies to share good practice and to ensure that all messages are supporting the wider goal of reducing demand during drought events. Further information on communications with key groups and stakeholders is included in **Appendix 8.**

We continuously gather feedback on and review the performance of our communications activity so that we can understand what is resonating with customers the most, pivot our approach if needed and feed into any lessons learned reviews. We measure feedback using three key methods - engagement tracking, stakeholder feedback and compliance monitoring. Some of the specific metrics include social media reach, cost effectiveness measures, website traffic, email open rate, number of media enquiries and feedback from customer groups. We also measure impact of activities by using smart meter data.

The key measure of success can be measured in the adoption of timely measures and responses in order to maintain the security of public water supplies and effective communication with our customers and regulators.

Figure 4.5 An example of how the different types of communication channels can be used to build between BAU and Level 1



Glossary

Table 5.1 Key abbreviations and their definitions used in Drought Plan 2027 and appendices

Abbreviation	Definition
AA	Appropriate Assessment
ALC	Active Leakage Control
ADA	Association of Drainage Authorities
ADCP	Acoustic Doppler Current Profilers
ADSO	Average Demand Source Output
AEoI	Adverse Effects on the Integrity (of any Habitats Sites)
AET	Actual Evapotranspiration
AMI	Advanced Metering Infrastructure
AMP	Asset Management Plan
AMP7	Asset Management Plan 7 (2020-2025)
AMP8	Asset Management Plan 8 (2025-2030)
AMR	Automated Meter Reading
AOD	Above Ordnance Datum
AQUATOR	Water resources hydrology and planning model
AquiMod2	Lumped-catchment groundwater model
ARC	Ardleigh Reservoir Committee
AVPY	Average Peak Yield
AW	Anglian Water
AWS	Anglian Water Services
AWIN	Advanced Water Infrastructure Networks (NAV)

Abbreviation	Definition
BAU	Business as Usual
BGS	British Geological Survey
CBA	Cost Benefit Analysis
CCW	Consumer Council for Water
CDF	Cumulative Distribution Function
Comms	Communications
CPM	Cost Per Mille
CPR	Cost Per Result
CSPL	Customer Supply Pipe Leakage
CNI	Critical National Infrastructure
CRAGS	Catchment Risk Assessment for Groundwater Sources
CSR	Customer Service Representative
CTR	Click Through Rate
CWS	County Wildlife Site
DAC	Drought Alert Curve
DAPWL	Deepest Advisable Pumped Water Level
Defra	Department for Environment, Farming and Rural Affairs
DI	Distribution Input
DMA	District Metering Area
DMO	Demand Management Option
DMSG	Demand Management Strategy Group

Abbreviation	Definition
DMT	Drought Management Team
DO	Deployable Output
DPG	Drought Plan Guideline
DRST	Drought Response Strategy Team
DRT	Drought Response Team
DVB	Drought Vulnerable Borehole
DWI	Drinking Water Inspectorate
DWSP	Drinking Water Safety Planning
DZ	Distribution Zone
EA	Environment Agency
EARs	Environmental Assessment Reports
EBSD	Economics of Balancing Supply and Demand model
ECMWF	European Centre for Medium-Range Weather Forecasts
EDP	Emergency Drought Plan
EMP	Environmental Monitoring Plan
eNGOs	Environment Non-Governmental Organisations
EP	Effective Precipitation
ESoR	Exceptional Shortage of Rain
G2G	Grid-to-Grid distributed hydrological model
GOWA	Great Ouse Water Act 1961
GR6J	6 parameter rainfall runoff model
GR10J	10 parameter rainfall runoff model

Abbreviation	Definition
GW	Groundwater
GWDTE	Groundwater Dependent Terrestrial Ecosystem
HH	Household
HoF	Hands off Flow
HRA	Habitats Regulations Assessment
IDBs	Internal Drainage Boards
IHUs	Integrated Hydrological Units
INA	Independent Networks Association
INNS	Invasive Non-Native Species
IWNL	Independent Water Networks Limited (NAV)
l/h/d	Litres per head per day
l/prop/d	Litres per property per day
l/s	Litres per second
LNR	Local Nature Reserve
LoS	Level of Service
LPM	Lumped Parameter Models
LRFs	Local Resilience Forums
LSE	Likely Significant Effects
LTA	Long-Term Average
LWS	Local Wildlife Site
mAOD	Meters Above Ordnance Datum
mBOD	Meters Below Ordnance Datum

Abbreviation	Definition
mg/l	Milligram per litre
MISER	Integrated water resource system model
Ml	Megalitre = million litres
Ml/d	Megalitre per day = million litres per day
Ml/yr	Megalitre per day = million litres per year
MOSL	Market Operator Services Limited
MORECS	The Meteorological Office rainfall and evaporation calculation system
MPs	Members of Parliament
MRF	Minimum Residual Flow
NAVs	New Appointments and Variations
NDG	National Drought Group
NE	Natural England
NERC	Natural Environment and Rural Communities
NEUBs	Non-Essential Use Bans
NGOs	Non-Governmental Organisations
NHH	Non-Households
ODI	Outcome Delivery Incentive
OFWAT	The Water Services Regulation Authority
OSAY	Operating Strategy Assessment of Yield
PALM	Prevent, Awareness, Locate and Mend - Anglian Water's leakage management approach
PCC	Per Capita Consumption

Abbreviation	Definition
PDPY	Peak Daily Peak Yield
PDSO	Peak Demand Source Output
PET	Potential Evapotranspiration
PHC	Per Household Consumption
PRVs	Pressure Reducing Valves
PSR	Priority Services Register
PWL	Pumped Water Level
PWS	Public Water Supply
PY	Potential Yield
PyWR	A generic dynamic modelling library that can be used for water resources systems
RAMSAR	RAMSAR sites are wetlands of global importance especially for waterfowl
RBMP	River Basin Management Plan
RP	Return Period
RSPB	Royal Society for the Protection of Birds
Ruthamford	A partially integrated supply system known as Ruthamford (the name deriving from Rut(land), (Graf)ham and (Pits)ford).
RWL	Rest Water Level
SAC	Special Areas of Conservation
SAP	Strategic Asset Planning
SE Water	South East Water
SEA	Strategic Environmental Assessment

Abbreviation	Definition
SEMD	Security and Emergency Measures Direction
SGI	Standardised Groundwater Index
SMD	Soil Moisture Deficit
SoR	Statement of Reasons
SPA	Special Protection Area
SPEI	Standard Precipitation Evapotranspiration Index
SPI	Standardised Precipitation Index
SRO	Strategic Regional Options
SSI	Standardised Streamflow Index
SSSI	Site of Special Scientific Interest
SW	Surface water
SWRA	Surface Water Risk Assessment
TUBs	Temporary Use Bans
TWAS	Trent-Witham-Ancholme Scheme
UKCEH	UK Centre for Ecology and Hydrology
UKHab	UK Habitat Classification is a unified and comprehensive approach to classifying habitats
UKWIR	UK Water Industry Research
UV	Ultraviolet
WDO	Water Demand Observatory
WFD	Water Framework Directive
WIA 1991	Water Industry Act 1991
WMO	World Meteorological Organisation

Abbreviation	Definition
WR&D	Water Resources and Drought
WRA	Water Resources Act
WRE	Water Resources East
WReN	Water Resources North
WRMP	Water Resources Management Plan
WRMP19	Water Resource Management Plan 2019
WRMP24	Water Resource Management Plan 2024
WRMP29	Water Resource Management Plan 2029
WRNF25	Environment Agency's Water Resources National Framework, published in June 2025
WRPG	Water Resources Planning Guideline
WRSE	Water Resource South East
WRZ	Water Resource Zone
WTW	Water Treatment Works
ZoI	Zone of Influence

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