Yorkshire Water Drought Permit Application

North West Area Supporting Information

Document Version Control

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Contents

1. Executive summary

An application is being made for a series of drought permits in YW's North West to reduce compensation flows because of a very dry spring in 2025. The sites are included as drought options in the Yorkshire Water Drought Plan 2022 available to view on the Yorkshire Water website. (https://www.yorkshirewater.com/about-us/our-vision-and-plans/resources/drought-plan/).

The North West Area includes five reservoir groups, six reservoirs and one main maintained flow. These reservoirs are located in the Wharfe Valley and Worth Valley and supply the Bradford, Keighley and Skipton areas in West Yorkshire. As a result of the low rainfall our reservoirs are below average for the time of year and there is a risk to security of supply if we do not take action to conserve reservoir stocks as much as possible. We are applying for drought permits to conserve supplies in reservoirs in case the dry weather continues. These drought permits, if granted, will reduce the amount of water we release from reservoirs to rivers allowing us to maintain these compensation flows for longer, and aiding the recovery of these reservoirs.

2. Proposal Description

The North West Area of our grid network supplies a considerable area of West Yorkshire including Bradford, Keighley and Skipton. The area includes five reservoir groups and six additional reservoirs. Not all the reservoirs provide water for public water supply. The North West Area can also receive supply from river sources in our region as it is connected to our grid system.

We are applying for drought permits to temporarily reduce compensation flows from the following impounding reservoirs (IREs) and to reduce one maintained flow in the North West Area:

- Leeming IRE
- Leeshaw IRE
- Doe Park IRE
- Hewenden IRE
- Eldwick IRE
- Reva IRE
- Weecher IRE
- Silsden IRE
- Embsay IRE
- Grimwith IRE
- Carr Bottom
- Springhead Weir maintained flow (Ponden and Lower Laithe reservoirs)

Compensation releases are a requirement under Acts of Parliament or licence agreements we hold with the Environment Agency. The flow releases support the environment by compensating the watercourses downstream from the reservoirs. We are applying for drought permits to conserve supplies to ensure continuation of public water supply and to help our reservoir stocks recover.

2.1 Location & Map

Figures 1 & 2 show the reservoirs in the North West Area of our grid network that will be impacted if the North West Area drought permits are granted. The permits will allow compensation releases and a maintained flow to be temporarily reduced for the duration the permits are in place. The reservoirs are in the North West of Yorkshire and are located from the upper reaches of the Wharfe Valley near Grassington, down to the Worth Valley between Keighley and Halifax to the south. They release compensation flows to tributaries of the River Wharfe, River Worth, and River Aire.

The reservoirs impacted by the proposed drought permits are listed in Table 1.

Reservoir Name	Grid reference	Location description	Reservoir / Reservoir Group
Leeming Reservoir	SE 03 34	South east of the village of Oxenhope	Leeming and Leeshaw compensation reservoirs
Leeshaw Reservoir	SE 01 35	West of Oxenhope	Leeming and Leeshaw compensation reservoirs
Doe Park Reservoir	SE 07 34	East of the town of Denholme	Thornton Moor and Stubden Group
Hewenden Reservoir	SE 07 35	West of the village of Harecroft	Thornton Moor and Stubden Group
Eldwick Reservoir	SE 12 41	North of the village of Eldwick;	Eldwick Reservoir
Reva Reservoir	SE 15 42	North west of the village of Hawksworth	Rombalds Group
Weecher Reservoir	SE 13 42	West of the village of Hawksworth	Rombalds Group
Silsden Reservoir	SE 04 47	North of the town of Silsden	Silsden Reservoir
Embsay Reservoir	SD 99 54	North west of the village of Embsay	Embsay Reservoir
Grimwith Reservoir	SE 06 64	North east of the village of Hebden	Grimwith Reservoir
Carr Bottom Reservoir	SE 14 44	Near Burley in Wharfedale	Rombalds Group

Table 1: Reservoirs impacted by drought permit proposals

We are also applying for a reduction in the flow of the River Worth at Springhead Weir (grid reference SE 02 37) which is maintained by compensation releases from Ponden and Lower Laithe Reservoirs.

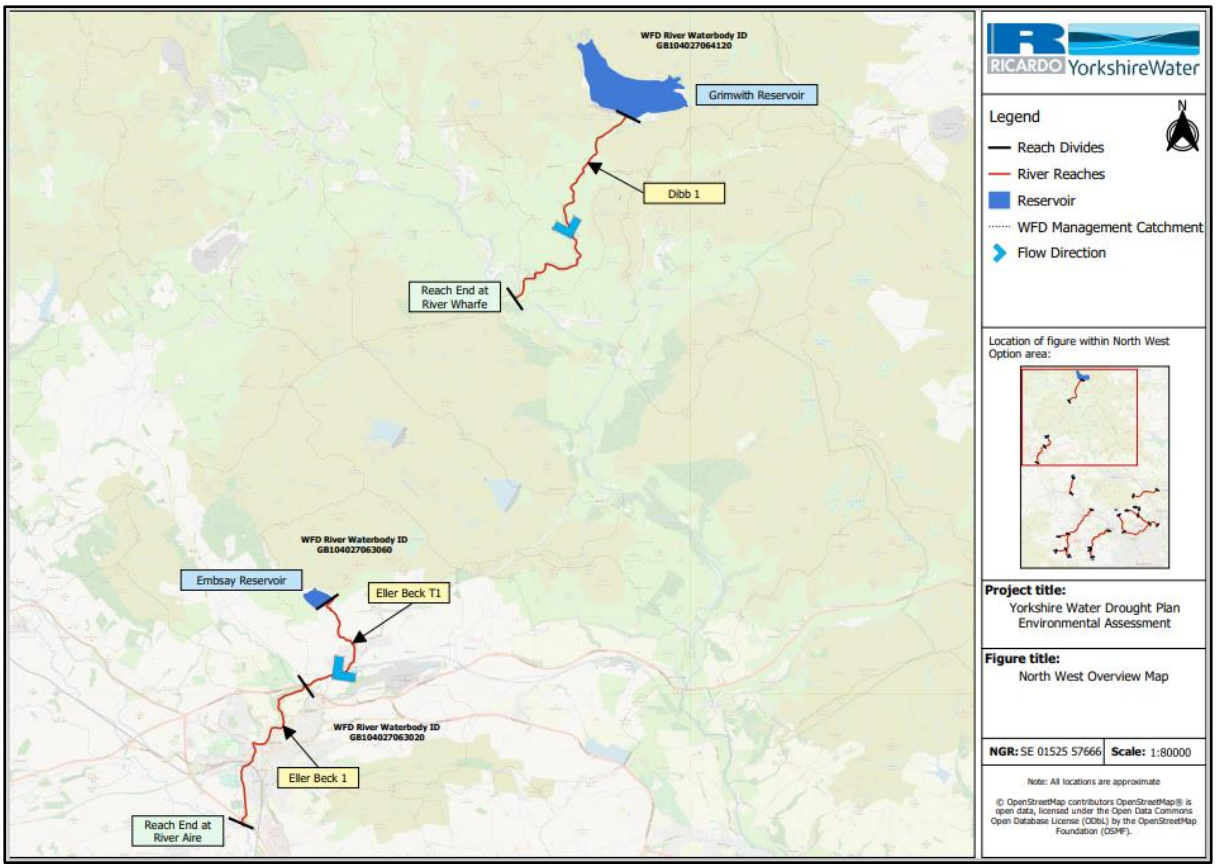


Figure 1: Map 1 of North West Area drought permit sites

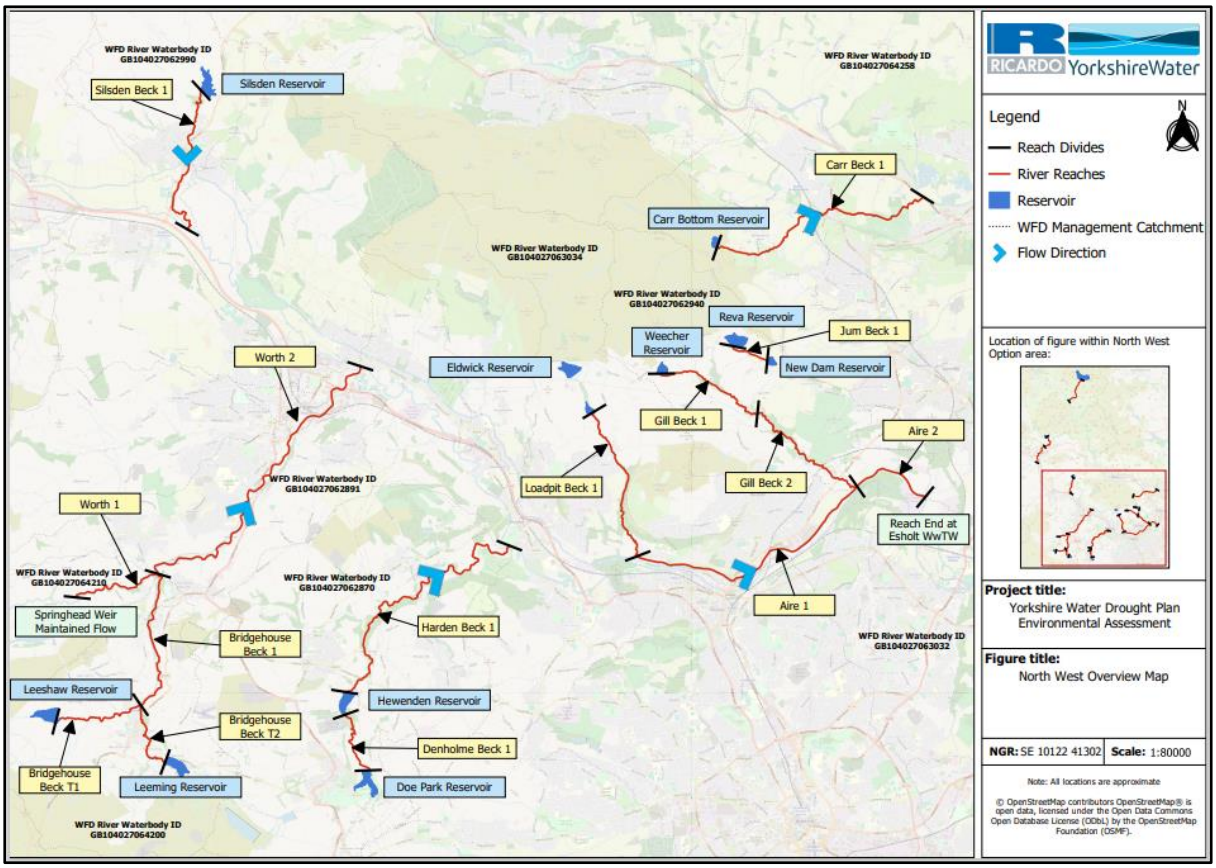


Figure 2: Map 2 of North West Area drought permit sites

A brief description of each of the reservoirs and reservoir groups is provided below. The group names have been defined for Yorkshire Water to use operationally and have been determined by the connectivity between the reservoirs that make up the groups.

Upper/Lower Barden and Chelker Group
The Barden and Chelker Group supplies Chellow Heights WTW in Daisy Hill near Bradford and Graincliffe WTW near Bingley. The group comprises Upper Barden, Lower Barden, and Chelker supply reservoirs.

Thornton Moor and Stubden Group
The Thornton Moor and Stubden Group supplies Chellow Heights WTW in Daisy Hill near Bradford. The group comprises of Thornton Moor and Stubden supply reservoirs, and Doe Park and Hewenden compensation reservoirs. Thornton Moor and Stubden do not release compensation flows but can support Doe Park and Hewenden compensation reservoirs downstream.

Worth Valley Group
The Worth Valley Group supplies Oldfield WTW and Sladen Valley WTW which are located between Haworth and Keighley. The group comprises of Watersheddles, Keighley Moor, Ponden, and Lower Laithe reservoirs. Ponden and Lower Laithe reservoirs are used to support a maintained flow at Springhead Weir.

Rombalds Group
The Rombalds Group supplies Graincliffe WTW near Bingley. The group comprises of Reva, Carr Bottom, Panorama, Graincliffe, and Weecher supply reservoirs. Compensation flows are released from Carr Bottom, Reva and Weecher reservoirs.

Embsay Reservoir
Embsay IRE provides water to Embsay WTW, and can be supported by Jenny Gill and Whinny Gill reservoirs.

Grimwith Reservoir
Grimwith Reservoir stands alone and provides a regulated release to support abstractions at low flows from the River Wharfe, it also provides compensation flow to the River Dibb, a tributary of the Wharfe. It has a small licence to supply Chellow Heights WTW directly.

Leeming and Leeshaw compensation reservoirs
Leeming and Leeshaw Reservoirs provide compensation flows to Leeming Water and Moorhouse Beck in the River Worth catchment. The flows released are dependent on stocks in these reservoirs, and the value of the required maintained flow at Springhead Weir on the River Worth is dependent on the combined release from Leeming and Leeshaw reservoirs. Under normal conditions Leeming and Leeshaw release a total of 8Ml/d and the maintained flow at Springhead Weir on the River Worth must be greater than 6Ml/d. When stocks in Leeming and Leeshaw are both below their operational control lines, the releases reduce to a combined 6Ml/d and the Springhead Weir maintained flow must increase to 8Ml/d. There are rules that govern the releases of Leeming and Leeshaw if only one is below the control lines, and these are detailed in the licences. Yorkshire Water currently holds a temporary local enforcement position (LEP) which does not modify the licensed compensation flow regimes at Leeming or Leeshaw but does remove the requirement to maintain flows at Springhead Weir

Silsden Reservoir
Silsden is used for compensation only and is released to Silsden Beck, a tributary of the River Aire. We have a long-term drought option to use the reservoir in supply and if this is required, we will apply for authorisation under a separate drought permit application. The compensation release at Silsden is a prescribed flow, which is only required if we are abstracting from Silsden reservoir, although we routinely make this release to Silsden Beck. In July 2022 we reduced the flow to preserve stocks in the reservoir and increase the time we would be able to maintain a release. We

carried out extensive monitoring before, during and after the reduction in prescribed flow, as though this were being done under a drought permit in line with our Environmental Monitoring Plan, although no permit was required.

Eldwick Reservoir
Eldwick Reservoir is a compensation reservoir releasing water to Eldwick Beck in the River Aire catchment.

2.2 Current Abstraction Licence Conditions

The drought permit applications propose reductions in compensation releases from eleven reservoirs. These are: Doe Park Reservoir; Hewenden Reservoir; Eldwick Reservoir; Reva Reservoir; Weecher Reservoir; Silsden Reservoir; Embsay Reservoir; Grimwith Reservoir; Carr Bottom Reservoir; Leeming Reservoir; and Leeshaw Reservoir. A reduction in the maintained flow at Springhead Weir, downstream of Ponden and Lower Laithe Reservoirs is also proposed.

The licences and downstream watercourses relating to the drought permit applications in the North West Area are:

- Doe Park Reservoir under conditions defined by the abstraction licence NE/027/0016/021, releasing flow to compensate the Denholme Beck and the River Aire.
- Hewenden Reservoir under conditions defined by the Bradford Waterworks Act 1854, releasing flow to compensate the Hewenden Beck and the River Aire.
- Eldwick Reservoir under conditions defined by the Shipley Waterworks and Police Act 1854, releasing flow to compensate the Eldwick Beck and the River Aire.
- Reva Reservoir under conditions defined by the Yeadon Waterworks Act 1916, releasing flow to the Hawksworth Beck Goit and the River Aire.
- Weecher Reservoir under conditions defined by the Baildon Local Water Act 1890, releasing flow to the Weecher Brow Beck and the River Aire.
- Silsden Reservoir under condition defined by the abstraction licence 2/27/15/149, releasing flow into the Silsden Beck and the River Aire.
- Embsay Reservoir under conditions defined by the Skipton Water Improvement Act 1904 and by Abstraction Licence 2/27/15/45, releasing flow into Embsay Beck and the River Aire.
- Grimwith Reservoir under conditions defined by the abstraction licence NE/027/0019/011, releasing water into the River Wharfe.
- Leeming Reservoir under conditions defined by the Leeming Reservoir impoundment licence (NE/027/0014/010), releasing flow to compensate Leeming Water and the River Worth.
- Leeshaw Reservoir under the Leeshaw Reservoir impoundment licence (NE/027/0014/011), releasing flow to compensate Dunkirk Water and the River Worth.
- Ponden Reservoir under conditions defined by the Ponden Reservoir abstraction licence (2/27/14/058), releasing flows to compensate the downstream watercourse, the River Worth
- Lower Laithe Reservoir under conditions defined by the Lower Laithe Reservoir abstraction licence (2/27/14/009), releasing flows to compensate the downstream receiving watercourse, Sladen Beck.
- The maintained flow at Springhead Weir under conditions defined by abstraction Licences 2/27/14/058 Ponden & 2/27/14/009 Lower Laithe. The value of the maintained flow is dependent on the releases from Leeming and Leeshaw reservoirs, which vary with the reservoir levels relative to operational control lines defined in the impoundment licences.

- Carr Bottom Reservoir under conditions defined by the Burley-in-Wharfedale Water Act 1899, releasing flows to compensate the downstream receiving watercourse, the Carr Beck.

The drought permit applications in the North West Area propose to temporarily reduce the compensation releases from eleven reservoirs and the maintained flow requirement at Springhead Weir, supported by Ponden and Lower Laithe Reservoirs. Table 2 gives the statutory volumes and the reduced volumes for the duration of the drought permits.

Further details on the drought permit applications are provided below. The reductions proposed relate to the water level (or stocks) in either individual reservoirs or the combined stocks of all the supply reservoirs we operate, referred to as "regional reservoir stocks." If granted the permits will be in place for 6 months from the date of approval. If we receive sufficient refill for our regional reservoirs stocks to recover to a level we refer to as 'the normal control line' and no individual reservoir group is below a level we refer to as our 'early warning trigger line,' we will increase the compensation flow to the volumes defined in the licence agreements. Plots of the reservoir stocks and further explanations about the triggers to be used for compensation flow reductions can be found in Section 4.3

Leeming Reservoir (SE 03 34)
We release water from Leeming Reservoir under conditions defined by the Leeming Reservoir impoundment licence (NE/027/0014/010). The terms of the licence state we must release flow from Leeming Reservoir to compensate the downstream receiving watercourse, Leeming Water. The volume we release is dependent on the stock levels in Leeming Reservoir and in Leeshaw Reservoir, which is operated under the terms of the Leeshaw Reservoir impoundment licence. Under the Leeming Reservoir impoundment licence conditions, we must continuously discharge not less than 4.00 Ml/d when Leeming Reservoir is either above or below its control line and Leeshaw is above its control line, or 5.250 Ml/d when the Leeming reservoir level is above the control line and Leeshaw reservoir level is below the control line, or 3.250 Ml/d when both the Leeshaw and Leeming reservoir levels are below the control lines.

The drought permit application for Leeming Reservoir is to reduce the compensation release required when Leeming reservoir level is above or below the control line and Leeshaw reservoir level is above the control line to 2.00 Ml/d, to reduce the compensation release when Leeming reservoir level is above the control line and Leeshaw reservoir level is below the control line to 2.63 Ml/d and to reduce further when the reservoirs are both below the control lines to 1.625 Ml/d. There would then be a further reduction to 1.33 Ml/d when Leeming reservoir level is above or below the control line and Leeshaw reservoir level is above the control line, and to 1.75 Ml/d when the Leeming reservoir level is above or below the control line and Leeshaw reservoir level is below the control line or 1.083 Ml/d when both the Leeshaw and Leeming reservoir levels are below the control lines, if regional reservoir stocks were below the regional Drought Control Line for four consecutive weeks or more, as defined in the Yorkshire Water Drought Plan.

Leeshaw Reservoir (SE 01 35)
We release water from Leeshaw Reservoir under conditions defined by the Leeshaw Reservoir impoundment licence (NE/027/0014/011). The terms of the licence state we must release flow from Leeshaw Reservoir to compensate the downstream receiving watercourse, Dunkirk Beck. Under the licence conditions, we must continuously discharge not less than 4.00 Ml/d when the reservoir level is above the control line defined in the licence, or 2.750 Ml/d when the reservoir level is below the control line.

The drought permit application for Leeshaw Reservoir is to reduce the compensation release required when Leeshaw Reservoir stocks are above the control line to 2.00 Ml/d, or when the reservoir stocks are below the control line to 1.375 Ml/d. There would then be a further reduction to 1.33Ml/d when the reservoir level is above the control line or 0.92 Ml/d if below the reservoir control line, if regional reservoir stocks were below the regional Drought Control Line for four consecutive weeks or more, as defined in the Yorkshire Water Drought Plan.

Springhead Weir Maintained Flow (SE 02 37)
We are licensed to abstract water from Ponden Reservoir for supply to customers under abstraction licence number 2/27/14/058. The terms of the licence state we must release flow from Ponden Reservoir to compensate the downstream receiving watercourse, the River Worth. We are licensed to abstract water from Lower Laithe Reservoir for supply to customers under the abstraction licence (2/27/14/009). The terms of the licence state we must release flow from Lower Laithe Reservoir to compensate the downstream receiving watercourse, Sladen Beck. Under both Ponden and Lower Laithe licence conditions Yorkshire Water must ensure the flow of water at Springhead Weir, which is below the confluence of the two watercourses, shall not fall below 6.00 Ml/d, when the combined compensation flow from Leeming and Leeshaw reservoirs is 8.00 Ml/d, or 8.00 Ml/d when the combined compensation flow from Leeming and Leeshaw reservoirs reduces to 6.00 Ml/d.

Since 10th July 2023, Yorkshire Water has operated Ponden and Lower Laithe reservoir compensation flows under a LEP for the purpose of undertaking a multi-year flow trial. The LEP does not modify the licensed compensation flow regimes at Leeming or Leeshaw but does remove the requirement to maintain flows at Springhead Weir (including the variable licensed maintained flow linked to Leeming and Leeshaw control lines).

Due to the introduction or variable compensation flows the drought permit application there will only be one trigger for this drought option. The maintained flow will reduce to 2.00 Ml/d if either Leeshaw and Leeming reservoirs are above their control lines and to 2.67 Ml/d if both Leeshaw or Leeming are below the control lines, if regional reservoir stocks are below the regional Drought Control Line for four consecutive weeks or more, as defined in the Yorkshire Water Drought Plan.

As part of the drought option Yorkshire Water will collect flow data by manual reads of a level board three times per week.

Doe Park Reservoir (SE 07 34)
Under the terms of abstraction licence NE/027/0016/021, we must release water from Doe Park Reservoir to compensate the downstream water course. The licence states that we must release flow from Doe Park Reservoir to the Denholme Beck so as to maintain a flow of no less than 3.6 Ml/d in Denholme Beck.

The drought permit application for Doe Park Reservoir is to provide a release of 1.8 Ml/d at all stock levels, which could be reduced to 1.2 Ml/d if regional reservoir stocks were below the regional Drought Control Line for four consecutive weeks or more, as defined in the Yorkshire Water Drought Plan.

Hewenden Reservoir (SE 07 35)
Under the terms of the Bradford Waterworks Act 1854, YWSL must release water from Hewenden Reservoir to compensate the downstream water course, the Hewenden Beck. The terms of the Act state that YWSL must release flow from Hewenden Reservoir at mill owners' discretion. YWSL currently operate the compensation flow under the terms of the 2014 LEP (Ref: KW/YW/Comp) whereby we continuously discharge not less than 6.30 Ml/d. The drought permit application for Hewenden Reservoir is to reduce the compensation release required to 3.15 Ml/d. The drought permit application for Hewenden Reservoir is to provide a continuous release of 3.15 Ml/d, which could be reduced to 2.08 Ml/d if regional reservoir stocks were below the regional Drought Control Line for four consecutive weeks or more, as defined in the YWSL Drought Plan

Eldwick Reservoir (SE 12 41)
Under the terms of Shipley Waterworks and Police Act 1854, we must release water from Eldwick Reservoir to compensate the downstream water course, the Eldwick Beck. The terms of the Act state that we must release two fifths of the average daily inflow to the reservoir between 05:00 and 20:00 every day (barring Sunday, Christmas Day, and Good Friday). We currently operate the compensation flow under the terms of an LEP held with the Environment Agency, whereby we continuously discharge not less than 1.00 Ml/d.

The drought permit application for Eldwick Reservoir is to reduce the compensation release required to 0.50 Ml/d. The drought permit application for Eldwick Reservoir is to provide a continuous compensation release of 0.50 Ml/d, which could be reduced to 0.33 Ml/d if regional reservoir stocks were below the regional Drought Control Line for four consecutive weeks or more, as defined in the Yorkshire Water Drought Plan.

Reva Reservoir (SE 15 42)
We are licensed to abstract water from Reva Reservoir for supply to customers under the Yeadon Waterworks Act 1916. The terms of the Act state that we must release not less than 0.791 Ml/d (174,000 gallons per day) to compensate the downstream water course, the Hawksworth Beck.

The drought permit application for Reva reservoir is to reduce the compensation release required to 0.396 Ml/d. There would be a further reduction to 0.264 Ml/d if regional reservoir stocks were below the regional Drought Control Line for four consecutive weeks or more, as defined in the Yorkshire Water Drought Plan.

Weecher Reservoir (SE 13 42)
We are licensed to abstract water from Weecher Reservoir for supply to customers by permit under the Baildon Local Water Act 1890. The terms of the Act state that we must release not less than 110,273 gallons (0.501 Ml) per working day Monday to Saturday to compensate the downstream water course, the Weecher Brow Beck. We currently operate the compensation release under an agreement held with the Environment Agency to discharge 0.43 Ml/d.

The drought permit application for Weecher Reservoir is to reduce the compensation release required to 0.215 Ml/d. There would be a further reduction to 0.143 Ml/d if regional reservoir stocks were below the regional Drought Control Line for four consecutive weeks or more, as defined in the Yorkshire Water Drought Plan.

Silsden Reservoir (SE 04 47)
We are licensed to abstract water from Silsden Reservoir for supply to customers under abstraction licence number 2/27/15/149. The terms of the licence include a prescribed flow condition of 2.409 Ml/d to be discharged to Silsden Beck, whereby no water can be abstracted if the flow exiting the reservoir is below this level. We do not currently abstract from Silsden Reservoir, however under normal operations we still release the prescribed flow volume to compensate the downstream watercourse.

We have a drought action for Silsden Reservoir to reduce the prescribed release to 1.20 Ml/d. There would be a further reduction to 0.80 Ml/d if regional reservoir stocks were below the regional Drought Control Line for four consecutive weeks or more, as defined in the Yorkshire Water Drought Plan.

This action does not require a drought permit unless we are abstracting from the reservoir. We would only use this reservoir for public water supply if we implemented a long-term drought action, which requires additional infrastructure to be installed. Although we do not have to implement this drought action, and therefore do not require a drought permit to reduce the compensation release, we have kept this information in for completeness so the cumulative impacts can be assessed.

Embsay Reservoir (SD 99 54)
We are licensed to abstract water from Embsay Reservoir for supply to customers under the Skipton Water and Improvement Act 1904 and abstraction licence number 2/27/15/45 (the "Embsay licence"). The terms of the Act state that we must release not less than 1.186 Ml/d (261,000 gallons per day) to compensate the downstream water course, the Embsay Beck. The Embsay licence states a flow of not less than 0.273 Ml/d (60,000 gallons per day) must remain in Mill Beck, immediately downstream of the abstraction point, when abstraction takes place.

The drought permit application for Embsay Reservoir is to reduce the compensation release required to 0.593 Ml/d. There would be a further reduction to 0.395 Ml/d if regional reservoir stocks were below the regional Drought Control Line for four consecutive weeks or more, as defined in the

Yorkshire Water Drought Plan. All releases would be greater than 0.273 Ml/d, therefore consistent with the Embsay licence condition.

Grimwith Reservoir (SE 06 64)
Under the terms of abstraction licence NE/027/0019/011 we must release flow from Grimwith Reservoir to compensate the downstream water course, the River Dibb, a tributary to the River Wharfe. The volume released changes throughout the year. From 1st January to 19th April, we must release no less than 15.1 Ml/d; from 20th April to 10th May no less than 7.8 Ml/d; from 11th May to 11th October no less than 3.8 Ml/d; from 12th to 31st October no less than 7.8 Ml/d; from 1st November to 31st December no less than 15.1 Ml/d.

The drought action applicable to the Grimwith Reservoir compensation release is to reduce the compensation release requirement to 7.55 Ml/d from 1st January to 19th April; 3.90 Ml/d from 20th April to the 10th May; 1.90 Ml/d from 11th May to 11th October; 3.90 Ml/d from 12th to 31st October; 7.55 Ml/d from 1st November to 31st December. There would be a further reduction to 5.03 Ml/d Ml/d from 1st January to 19th April; 2.60 Ml/d from 20th April to the 10th May; 1.27 Ml/d from 11th May to 11th October; 2.60 Ml/d from 12th to 31st October; 5.03 Ml/d from 1st November to 31st December if regional reservoir stocks were below the regional Drought Control Line for four consecutive weeks or more, as defined in the Yorkshire Water Drought Plan.

We are also required to release a regulating flow from Grimwith Reservoir to support abstractions from the River Wharfe at low flows. We can abstract from two abstraction points on the River Wharfe, which are at Lobwood (under the terms of licence 2/27/19/129/R01) and Arthington (under the terms of licence 2/27/20/196/R01). We have a drought option to temporarily suspend the regulatory flow and a further option to increase the annual volume we take from the River Wharfe at Lobwood. Both options require a drought permit and details will be provided in our River Wharfe supporting document when that permit application is submitted.

Carr Bottom Reservoir (SE 15 45)
We are licensed to impound water at Carr Bottom Reservoir for supply to customers under the Burley-in-Wharfedale Water Act 1899. The terms of the Act state that we must release not less than 0.085 Ml/d (18,600 gallons per day) into the downstream watercourse, the Carr Beck.

The drought permit application for Carr Bottom Reservoir is to reduce the compensation release required to 0.0425 Ml/d. There would be a further reduction to 0.028 Ml/d if regional reservoir stocks were below the regional Drought Control Line for four consecutive weeks or more, as defined in the Yorkshire Water Drought Plan.

Compensation Water Source	Receiving Watercourse	Relevant Authorising Act or Licence	Current Legal Requirement (Ml/d)	Drought Permit Quantities applied for	
				Flow reduced by half (Ml/d)	Flow reduced by two thirds (Ml/d)
Leeming Reservoir	Leeming Water, River Worth	Leeming Reservoir Impoundment Licence NE/027/0014/010	Compensation releases; 4.00 when Leeming is either above or below the control line (CL) and Leeshaw is above CL, 5.25 when Leeming above CL and Leeshaw below control line, 3.25 when Leeming and Leeshaw below CL	2.00 when Leeming is above or below CL and Leeshaw is above CL, 2.63 when Leeming above CL and Leeshaw below CL, 1.63 when Leeming and Leeshaw below CL	1.33 when Leeming is above or below CL and Leeshaw is above or below CL, 1.75 when Leeming above CL and Leeshaw below CL, 1.08 when Leeming and Leeshaw below CL
Leeshaw Reservoir	Dunkirk Beck, River Worth	Leeshaw Reservoir Impoundment Licence NE/027/0014/011	4.00 above Leeshaw CL, 2.75 below Leeshaw CL	2.00 when Leeshaw above CL, 1.38 when Leeshaw below CL	1.33 Leeshaw above or below CL, 0.92 when Leeshaw below CL
Springhead Weir Maintained Flow	River Worth	Ponden 2/27/14/058 and Lower Laithe 2/27/17/009 Abstraction Licences	Original licenced conditions state: 8.00 when Leeming and Leeshaw are below CL 6.00 when Leeming and Leeshaw are above CL However, Ponden and Lower Laithe are currently operating under an LEP		2.00 when either Leeming or Leeshaw above CL, 2.67 when both reservoirs below CL
Doe Park Reservoir	Denholme Beck River Aire	Abstraction licence NE/027/0016/021	3.60	1.80	1.20
Hewenden Reservoir	Hewenden Beck River Aire	Bradford Waterworks Act 1854	6.30	3.15	2.10
Eldwick Reservoir	Eldwick Beck River Aire	Shipley Waterworks and Police Act 1854	1.00 Two fifths of the average daily inflow to the reservoir between	0.50	0.33

Compensation Water Source	Receiving Watercourse	Relevant Authorising Act or Licence	Current Legal Requirement (Ml/d)	Drought Permit Quantities applied for	
				Flow reduced by half (Ml/d)	Flow reduced by two thirds (Ml/d)
			05:00 and 20:00 every day except Sunday, Christmas Day and Good Friday.		
Reva Reservoir	Hawksworth Beck River Aire	Yeadon Waterworks Act 1916	0.791	0.396	0.264
Weecher Reservoir	Weecher Brow Beck River Aire	Baildon local Water Act 1820	0.43 110,273 gallons per working day (Mon-Sat)	0.215	0.143
Silsden Reservoir	Silsden Beck River Aire	Abstraction Licence 2/27/15/149	2.409 Ml/d	1.20	0.80
Embsay Reservoir	Embsay Beck River Aire	Skipton Water and Improvement Act 1904 and Abstraction Licence 2/27/15/45	1.186	0.593	0.395
Grimwith Reservoir	River Wharfe	Abstraction licence NE/027/0019/011	15.1 from 1st Nov to 19th Apr 7.8 from 20th Apr to 10th May 3.8 from 11th May to 11th Oct 7.8 from 12th to 31st Oct	7.55 Nov-Apr 3.90 Apr-May 1.9 May-Oct 3.90 Oct	5.03 Nov-Apr 2.60 Apr-May 1.27 May-Oct 2.60 Oct
Carr Bottom	Carr Beck	Burley-in-Wharfdale Act 1899	0.085	0.0425	0.028

Table 2: Summary of drought permit proposals and relevant licences

2.3 Proposed Start & Expiry Date for Permit

YW propose the drought permits are implemented as soon as determined and be in place for a period of 6 months.

3. Draft Permit

See appended draft Drought Permits for each drought option (Appendix 3).

4. Drought Permit Justification

4.1 Why the permits are necessary

The drought permit applications are necessary due to an exceptional shortage of rain threatening a serious deficiency of supplies of water in the area supplied by Yorkshire Water. Evidence to demonstrate the exceptional shortage of rain is shown in section 5 "Case for an Exceptional Shortage of Rainfall"

We are applying for drought permits in the North West Area to reduce the rate of decline in reservoir stocks, and to aid the recovery of reservoir stocks during the winter. Furthermore, by maximising our prospects for winter recovery, we will decrease the likelihood of requiring drought permits in 2026.

4.2 Supply Areas & Respective populations impacted

This drought permit application will alter how we operate our reservoirs in our North-West Area operating zone. The North-West Area is connected to our conjunctive use grid system, and we may also look to apply for drought permits in other parts of our region.

The following supply areas are impacted in Yorkshire Water's NW area:

- Bradford
- Skipton & surrounding areas
- Craven
- Keighley & surrounding areas
- Ilkley/ Otley/ Addingham & surrounding areas
- Baildon/Bingley/Shipley & surrounding areas

The population estimated to be affected can be estimated from WTW production sites as follows:

Chellow WTW – Average 140Ml/d - Population = 580,625
Graincliffe WTW – Average 40Ml/d - Population = 165,893
Embsay WTW – Average 20Ml/d - Population = 82,946
Sladen WTW – Average 9Ml/d - Population = 37,325
Oldfield WTW – Average 6Ml/d - Population = 24,883
Total = 891,674 people

4.3 Daily Water Demand and how it is met from the available source

Our reservoir control lines represent the value of reservoir storage that is required to guarantee a continuous rate of supply (equivalent to yield) such that the reservoir storage never falls below a critical storage line given the minimum historical inflows.

We calculate two sets of control lines:

- Drought Control Line (DCL) - the DCL is designed such that stocks will never fall below marginal storage when the reservoirs supply 85% of their calculated yield.

- Normal Control Line (NCL) - the NCL is designed such that stocks will never fall below the DCL when the reservoirs supply their calculated yield.

Once we have calculated the NCL and DCL, we linearly interpolate between the 100% full level and the NCL, the NCL and DCL, and the DCL and emergency storage level, to obtain the ten control lines (CLs) used in our modelling and reservoir stocks monitoring. The NCL is control line (CL) 3, the DCL is CL7, and we use CL4 as the Environment Agency trigger line. This is the trigger for Yorkshire Water and the Environment Agency to initiate communications around a potential emerging dry weather situation.

The control lines are updated on a regular basis and were last updated in 2022 based on minimum inflows to the reservoirs from 1900 to 2020. We have remodelled our historic inflows using GR6J rainfall runoff models and extended our historic record back to 1900.

Control lines have been revised since our most recent drought plan, but the triggers in our drought plan related to control lines are still applicable to the updated control lines. We will carry out a further review of our control lines after the current drought period has ended, and when reservoir inflows are updated to include this current period.

When our reservoir levels drop below NCL, our operating strategy is to reduce reservoir abstraction to yield and increase river abstraction while still meeting daily demand. The increased river abstraction is a combination of abstraction for treatment and distribution and pumping river water to reservoir storage. In line with this strategy, we increased use of river abstraction when we dropped below NCL in March. Average reservoir abstraction in Q1 (Jan-Mar) was 685Ml/d, this reduced to an average of 584Ml/d in Q2 (Apr-Jun). River abstraction has increased from a Q1 average of 437Ml/d to an average of 523Ml/d in Q2. When river levels have increased in Q2 we have been able to maximise abstraction, reducing reservoir use as close to minimum as possible. For example, higher river levels in the first 2 weeks of June allowed us to increase river abstraction at an average of 587Ml/d reducing reservoir abstraction to an average of 487Ml/d. We will continue to maximise river abstraction within licence constraints.

4.4 Forecasted effects of continued dry weather on customer supplies

Our current modelling is based on a 1995/1996 inflow scenario which is our worst case 12-month historical period with approximately 60% long-term average (LTA) rainfall over a 12-month period. The model outcome indicates that with current WTW availability and a similar reservoir inflow to 1995/1996, we would require a temporary use bans (TUB) and will require further drought permits (on rivers and in other areas), however, customer supplies will not be impacted. Our latest WRPR forecast (at the time of preparing this application) indicates that the forecast date for TUB and drought order / drought permit implementation across the Yorkshire Water region will be 14/07/25 and 25/08/25 respectively.

5. Case for an exceptional shortage of rain (ESoR)

Full details of events and climatic conditions that have led to the need for the drought permits is described in this section.

5.1 Introduction

In this section, we demonstrate an exceptional shortage of rainfall by analysis of monthly rainfall following the Environment Agency guidance document ('Hydrological guidance for the assessment of an Exceptional Shortage of Rain (ESoR)', 2025). We demonstrate that ESoR has primarily led to a serious risk of deficiency of supplies in our NW region. The geographical extent and the time period of analysis have been agreed with the local Environment Agency Hydrology (Yorkshire) team.

The following rainfall analysis has been conducted to support our assessment:

- Plots of 2025 rainfall in relation to long term average (LTA) and previous droughts

- Standardised Precipitation Index (SPI)
- Rainfall ranking compared to records starting in 1871
- Calculation of Cunnane plotting position

We also present additional evidence for the following non-rainfall variables:

- River flows
- Reservoir storage
- MORECS Soil Moisture Deficit

In each subsection, we start by showing the requirements as set out by the Environment Agency (Appendix A – ESoR checklist for water companies March 2025 v2.1) in grey boxes. Following such text boxes, we present our approach and analysis in response to those.

5.2 Rainfall Data

- You must use areal rainfall data for the catchment area of interest.
- In most circumstances, you should use the Environment Agency's HadUK/DRT dataset Data for hydrological areas is provided to water companies monthly. If the Hydrological Areas are not appropriate, then rainfall data can be extracted for a bespoke catchment area from the HadUK/DRT dataset by Environment Agency hydrologists. You must fully explain which dataset has been used and why. Recent data from third party websites may underestimate complete monthly rainfall totals.

The rainfall data used in this assessment was provided by the Environment Agency Hydrology Yorkshire team. The data included is the HadUK v1.2.0.0 monthly totals covering January 1871 to December 2023 (inclusive) and the Environment Agency Daily Rainfall Tool (DRT) monthly totals covering January 2024 to June 2025 (inclusive). The use of the HadUK/EA DRT rainfall data allows analysis of long time series dating back to 1871. The rainfall data covers the catchments of our reservoirs in our NW region that are relevant to this permit application. The geographical extent will be provided and described in greater detail in section 5.4.

- If you have calculated areal rainfall yourself (you are strongly advised to avoid this):
- You will need to demonstrate that your data is of better quality and/or more hydrologically relevant than the HadUK/DRT dataset.
- Set out the limitations of the dataset.
- Your areal rainfall should be calculated in accordance with British Standard BS7843-4:201296. The rain gauges used must be quality controlled, have minimal missing data and be operated in accordance with British Standard.

We can confirm that we have not calculated the areal rainfall data ourselves and have used the data provided by the Environment Agency as explained above.

5.3 Period of Analysis

- Determine the start and end point of the period of analysis before starting the assessment. This is the period of the rainfall deficit which is used to support the ESoR case. You should agree the period of analysis with the relevant Environment Agency hydrologist, the Area Drought Coordinator and water company lead.
- The application should be submitted as soon as possible once the need for a Drought Permit has been identified a or as soon as possible. [as written]
- Start of the period of analysis:
- Provide clear evidence (e.g. charts/graphs) of the point at which rainfall is lower than normal.

- Justify how the variables used here are reflective of the water supply situation in the catchment area of interest.
- End of the period of analysis
- Provide clear evidence (e.g. charts/graphs/reference to Drought Plan) that the rainfall deficit has triggered the need for a drought permit.
- Use the latest rainfall data at the point of the application.

The period over which the analysis has been conducted was agreed with the Environment Agency Hydrology Yorkshire team. This drought can be characterised as relatively short but of high intensity compared to previous recorded droughts. As a result, the onset of the exceptional shortage of rainfall was agreed to be February 2025. Although January 2025 has also seen lower than average rainfall in our NW region (see Figure 4), to be consistent with the assessment in our other regions, February 2025 will be the start of the period of analysis for all of our regions. The latest rainfall data up until the point of application has been used in this assessment representing a 5-month period from February to June 2025.

5.4 Geographical Extent of Analysis

- Provide justification for the catchment area used in the analysis, this may be one or several of the Environment Agency's hydrological areas, a bespoke catchment or water resources zone.
- Provide evidence of how the rainfall deficit is relevant to the catchment area of the public supply source or the wider integrated water resource zone/subunit of this zone.
- It is recommended that catchments should contain one or more Met Office registered rain gauge located within them.

The geographic extent of the analysis was agreed with the Environment Agency Hydrology Yorkshire team. We have used a bespoke area that covers all reservoir catchments that are included in the North West group of permits. The catchments have been grouped into a single geographic extent shown in Figure 3 (this area is henceforth referred to as the 'North West'). This group of reservoirs are the primary source of supply to our customers in the NW region. The rainfall has been consistently low across this whole region and therefore there was no need to investigate individual areas separately. Yorkshire Water uses a grid system to balance supplies across the network, therefore the shortage of rainfall in this area is relatively uniformly felt across the Yorkshire Water supply zone.

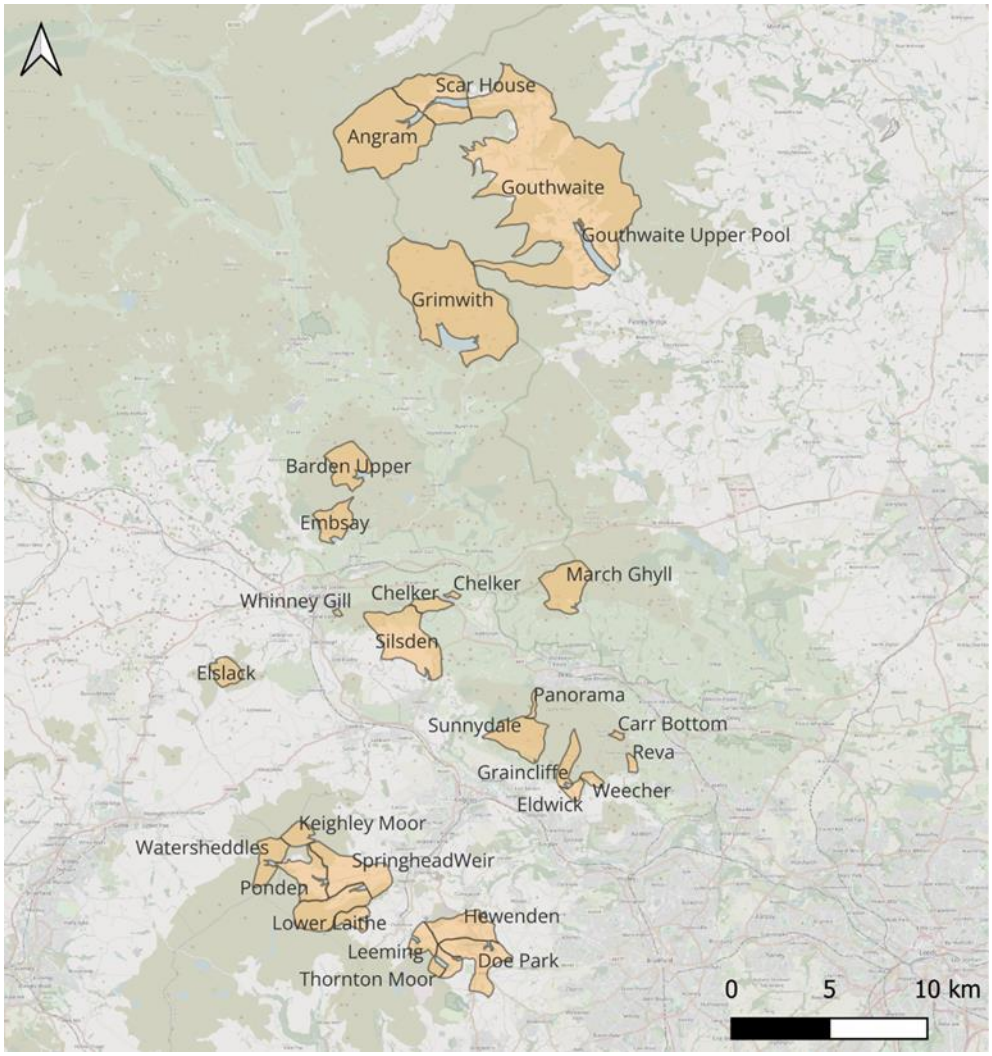


Figure 3: Geographic extent of the exceptional shortage of rainfall analysis

5.5 Technical Rainfall Analysis Methods

- Refer to the Environment Agency's supplementary guidance on drought permits and drought orders, available on request from Water-company-plan@environment-agency.gov.uk
- Use the same rainfall dataset (usually HadUK/DRT) for each analysis method (asset out in the sections above) and the same historic period of record (from 1871)
- 1961 to 1990 should currently be used as the period of record for Long Term Averages (LTA) assessment (this is planned to be updated to 1991 to 2020, and this document will be updated to reflect that)
- Use your assessment period of analysis for each method as your main evidence. If you use any shorter periods as supporting evidence (for example, the winter refill period), you must justify how these are relevant to the water resource situation
- Detail any limitations and uncertainties associated with the methodology, and the possible impacts on the results

Rainfall comparison with the LTA and historical droughts

Figure 4 shows the rainfall during December 2024 to June 2025 in comparison to the monthly long-term averages (LTA). The LTA was calculated using the new 1991-2020 standard period which was confirmed by the Environment Agency Hydrology Yorkshire team to be taken for the calculation of

LTA. The rainfall is significantly below average for this time of year, with particularly low rainfall between February to April. Although it can be seen that January 2025 has also seen below average rainfall, it is not part of the period of analysis adopted by Yorkshire Water for two reasons: (1) Yorkshire Water uses a grid system to balance supplies across the network, therefore the shortage of rainfall in the entire area is relatively uniformly felt across the Yorkshire Water supply zone; and (2) In order to be consistent in the assessment of ESoR with other regions (where January 2025 did not have below average rainfall), February 2025 will be the start of the period of analysis.

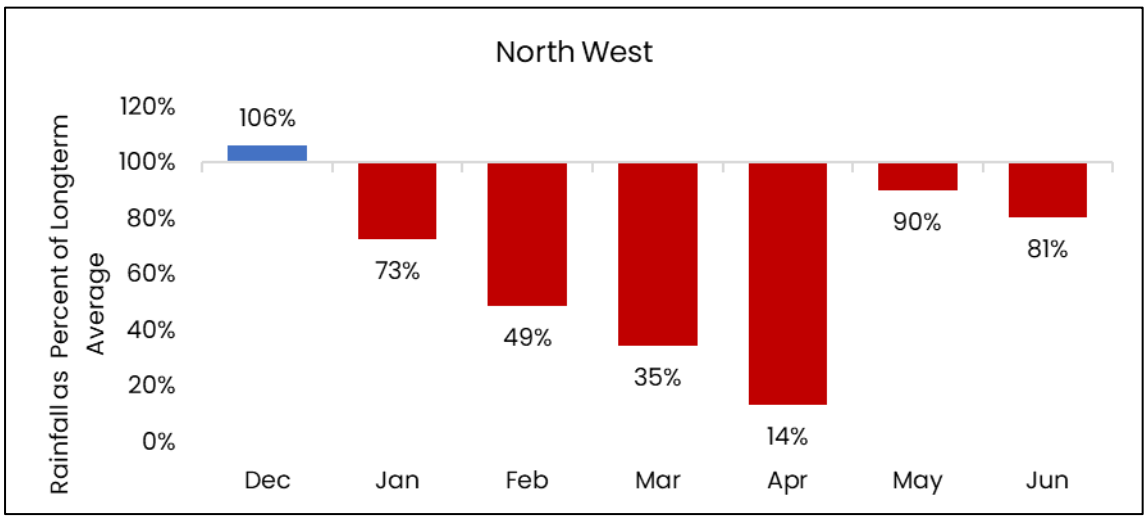


Figure 4: Rainfall compared to long-term average

Figure 5 Shows the cumulative rainfall starting from the end of January for the analysis period in comparison with the LTA and the two most significant recent droughts (2022 and 1995). Rainfall from 2020 is also included as the year was characterised by very low rainfall in the springtime. The rainfall for this period is notably lower than all the historic droughts and LTA.

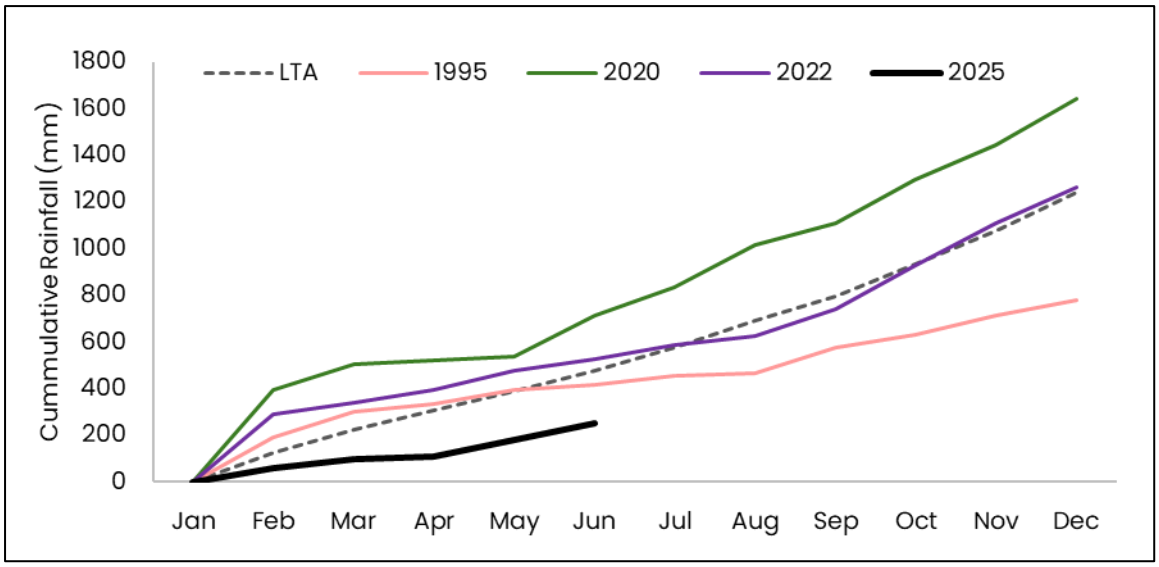


Figure 5: Cumulative rainfall plotted against previous droughts and long-term average

Standardised Precipitation Index (SPI)

The Standardised Precipitation Index (SPI) values can be interpreted as the number of standard deviations by which the observed anomaly deviates from the long-term mean. The SPI can be calculated for differing periods using monthly input data. We have calculated the SPI for all the monthly rainfall data listed in Figure 6 for a 1-month, 3-month and 5-month duration (i.e., 1-, 3-, and 5-months window respectively leading to the month shown in the first column). The 5-months from February to June are severely dry, while the 3- and 5-months preceding May are extremely dry

according to the index categorisation. The lowest index is associated with a three-month period preceding April 2025.

SPI of 2025 rainfall for the North West			
2025	**SPI - 1month**	**SPI - 3month**	**SPI - 5month**
February	-0.602	-0.183	-0.695
March	-1.529	-1.507	-1.012
April	-2.515	-2.637	-1.248
May	-0.009	-2.247	-2.142
June	0.134	-1.194	-1.954

SPI Category:						
Extremely Wet **(≥ 2.0)**	Severely Wet **(1.5 → 2.0)**	Moderately Wet **(1.0 → 1.5)**	Near Normal **(1.0 → -1.0)**	Moderately Dry **(-1.0 → -1.5)**	Severely Dry **(-1.5 → -2.0)**	Extremely Dry **(≤ -2.0)**

Figure 6: SPI values across the period of analysis

Rainfall Ranking

The ranking of the rainfall periods compared to the historic dataset is shown in Figure 7. Different periods preceding the period of analysis are presented up to twelve-month durations. For example, the accumulated rainfall for the 11 months leading up to February 2025 was the 79th driest on record. The Cunnane probability ranking has been calculated for each duration and the rankings are shaded accordingly. The 5-month period preceding June 2025 is the 5th driest on record and classified as exceptionally low rainfall according to the Cunnane probability ranking. The 3- to 5-month periods preceding May 2025 are all in the top three driest periods on record.

Rank of 2025 rainfall in period since 1871													
North West		**Duration (months)**											
2025		1	2	3	4	5	6	7	8	9	10	11	12
End Month	Feb	40	38	64	49	34	61	45	40	37	59	79	96
	Mar	11	10	7	39	26	21	44	29	23	21	45	61
	April	2	1	2	2	17	9	12	26	15	14	12	25
	May	80	10	1	2	2	18	10	11	30	18	15	12
	June	83	73	21	6	5	5	19	11	13	30	19	17

KEY: Cunnane Probability Ranking:						
Exceptionally high **(> 0.95)**	Notably high **(0.87 → 0.95)**	Above normal **(0.721 → 0.869)**	Normal **(0.28 → 0.72)**	Below normal **(0.131 → 0.279)**	Notably low **(0.05 → 0.13)**	Exceptionally low **(< 0.05)**

Figure 7: Ranking of the rainfall against historic records

5.6 Supporting Information

The following section summarises non-rainfall analysis as supporting evidence.

Soil Moisture Deficit (MORECS)

We have used the Met Office Rainfall and Evaporation Calculation System (MORECS) to estimate Soil Moisture Deficit (SMD). Data from the MORECS database is much less granular than rainfall data being aggregated to 40 x 40km grids. This limits our ability to present data specifically for the

geographic extent of the NW region. As advised by the Environment Agency Hydrology Yorkshire team, we present data for grid square 92 which covers the largest extent of the NW region. Figure 8 highlights the current trend in 2025 versus historical years dating back to 1993 as well as key droughts in this time. The SMD is currently above the 90th percentile and significantly greater than the 2022 and 1995 drought years.

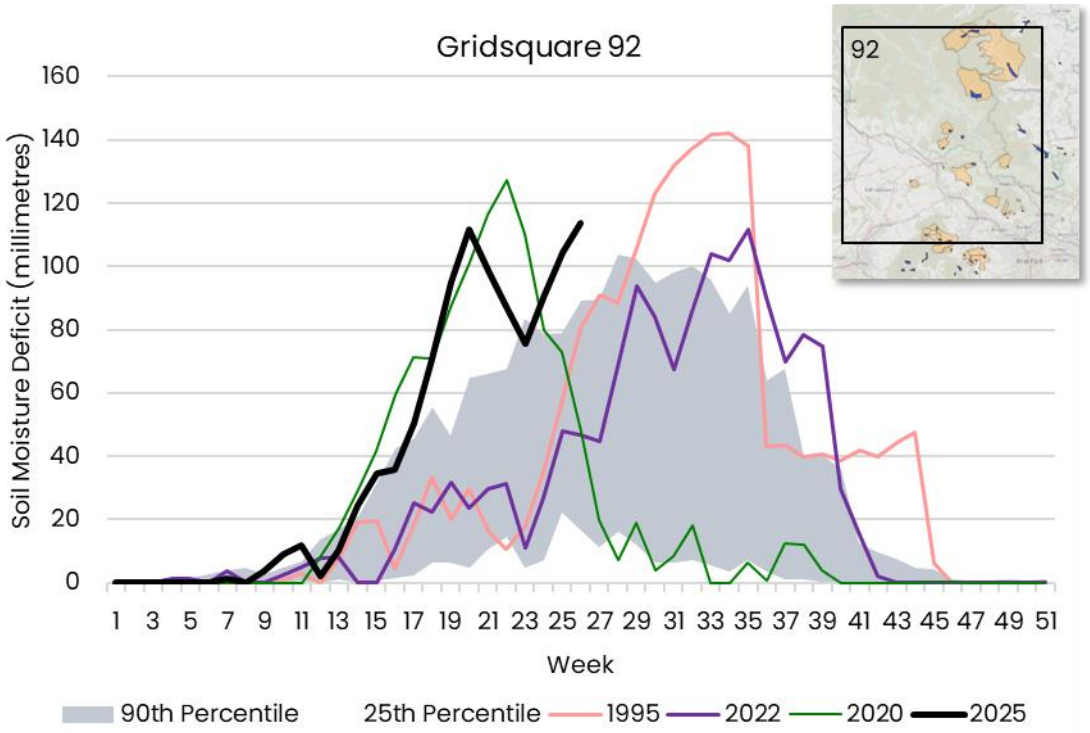


Figure 8: Grid square 92 soil moisture deficit compared to historic droughts and long-term average

River Flows

River flows are another symptom of low rainfall. The NW region has the greatest interconnectivity with the River Wharfe; part of the area lies within the river's catchment and releases from Grimwith Reservoir are determined by the river's level. Figure 9 shows the river flow rate at the Addingham gauge against the lowest years since 1989, including the key historical drought years of 1995 and 2022. The most remarkable feature of this plot is that the flow was consistently low between the start of March 2025 and the end of May. Flows in the Wharfe are highly sensitive to rainfall events, typically rising and falling rapidly. Due to the prolonged exceptional shortage of rain, the river flows in early 2025 were below the lowest flow band of 252 Ml/d between 3rd April and 26th May 2025. The flows rose above the aforementioned flow band briefly following rainfall in late May and late June but not for a sustained period of time.

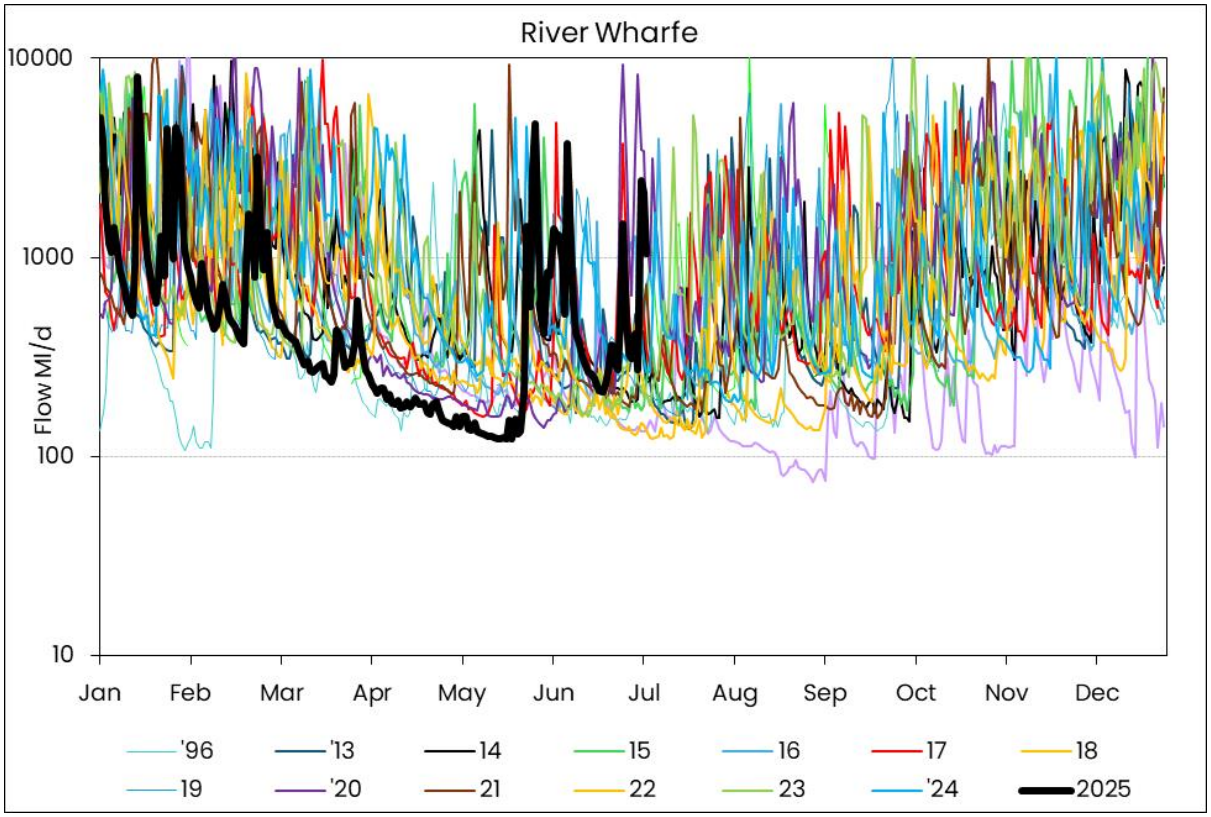


Figure 9: Flow in the River Wharfe

Reservoir Levels

Figure 10 shows the reservoir levels in our NW group; the levels are lower than any other year at this point in the year. Reservoir levels were above 90% at the start of the year following a relatively wet autumn and winter of 2024. However, between February and May, the stocks declined steeply at a consistent rate of approximately 3% each week. The reservoir levels have recovered in May/June following some rainfall and efforts to balance stocks across the Yorkshire Water region. The reservoir levels show that the dry weather has impacted on the water stocks in the NW region and it will require significant rainfall to increase supplies.

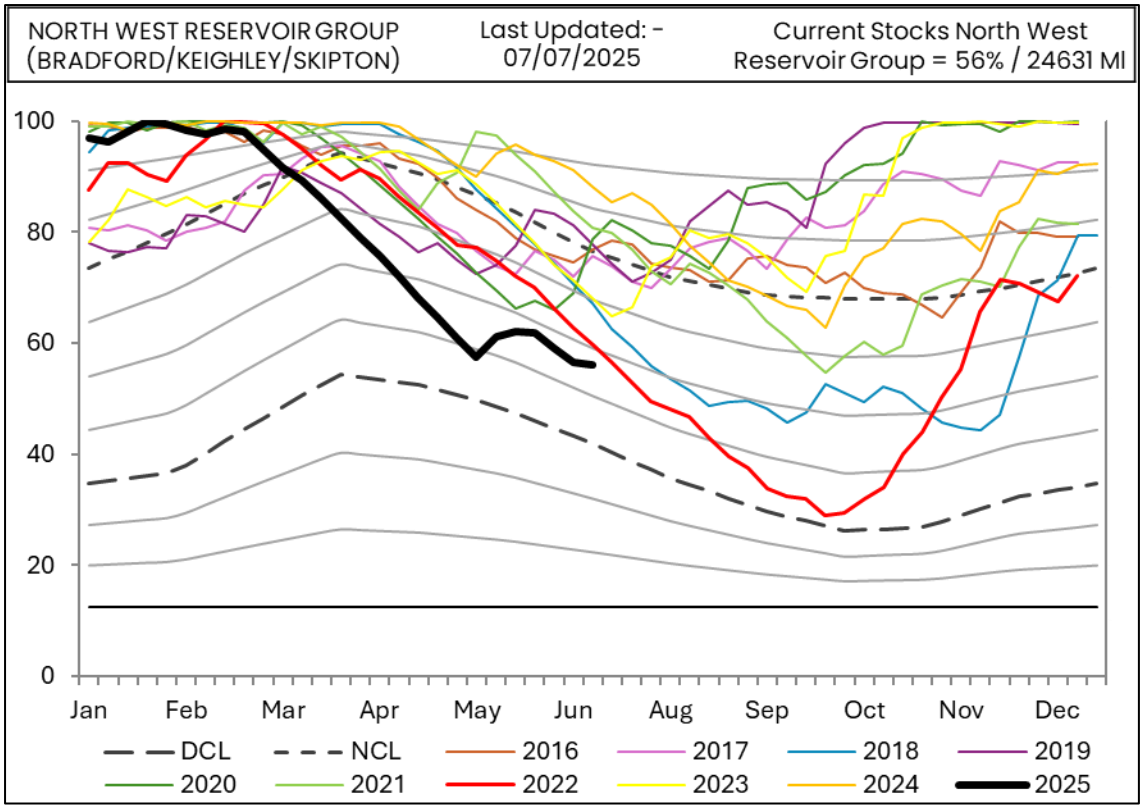


Figure 10: Reservoir levels of the north west group

5.7 Summary and Conclusions

The spring of 2025 has been exceptionally dry. Across our NW region, the 5-month period to June was the 5th driest since records began in 1871, and the three-month period up to May was the driest. The SPI and ranking analyses indicate conditions were extremely or exceptionally dry across several durations within the analysis period.

The low rainfall so far in 2025 has been accompanied by periods of hot weather, and this combination of hot dry weather has resulted in high SMD values throughout the region. As a result, when there has been intermittent rainfall, it has not resulted in significant runoff to rivers. The River Wharfe has had very low flow, and this has resulted in record low reservoir levels for this time of year.

The dry weather means we must be ready to take action to avoid water shortages later in the year. If the exceptionally low rainfall continues (or even if there is below LTA rainfall during the summer), our forecasting models predict extremely low reservoir levels and the need for further drought measures according to our drought plan.

6. Evidence Supporting Drought Plan has been followed

Our Drought Plan details a number of actions that we would follow when triggers are met. These can be found in Table 2.3 "Drought plan triggers and associated actions" of our Plan (https://www.yorkshirewater.com/media/ny5nq2vk/yorkshire-water_drought-plan-2022_final_public-april-2022.pdf). The triggers and actions are detailed in the subsections below.

6.1 Triggers

6.1a Trigger: Reservoirs crossed our normal control line

We meet customer demand through use of our licensed water resources, which include reservoir, river, and groundwater supplies. On average regional reservoir stocks fall below normal control line (NCL) for 12 weeks a year, this normally occurs between mid-April and June. When we are below NCL we balance raw water resources by reducing reservoir abstraction and increasing river abstraction, which helps to conserve reservoir stocks.

In 2025 regional reservoir stocks crossed the normal control line on 25th March 2025. As part of our proactive approach to dealing with dry weather we instigated our Bronze Company response early (on the 3rd April) to the developing dry weather situation.

In reaction to this our Water Resources Plan (WRAP) produced on 1st April increased grid production (river supplied water treatment works) to support our reservoir supplied water treatment works (WTWs) with treated water. We actively assess each area weekly and decide which area requires what volume of grid support to balance supply/resources. Each reservoir group and area grouping have different control lines, we use these control lines to effectively balance the drop in each area through use of our strategic raw and treated water links, with the aim to bring each group as close to yield as possible whilst managing the supply to customers.

We also maximised our river abstractions (where the river level allowed) on the Wharfe, Ouse and Ure to support the reservoir groups with raw water, this then allows us to balance the decline in groups through our strategic raw water network.

This strategy has significantly changed our water resources proportions. Average reservoir abstraction in Q1 (Jan-Mar) was 685Ml/d, this reduced to an average of 584Ml/d in Q2 (Apr-Jun). River abstraction has increased from a Q1 average of 437Ml/d to an average of 523Ml/d in Q2. When river levels have increased in Q2 we have been able to maximise abstraction, reducing reservoir use as close to minimum as possible. For example, higher river levels in the first 2 weeks of June allowed us to increase river abstraction to an average of 587Ml/d reducing reservoir abstraction to an average of 487Ml/d. We will continue to maximise river abstraction within licence constraints.

We have also increased leakage focus with the North-West by escalating a leakage hub, to enable us to minimise leakage and as a result reduce demand in the NW area, with the team focusing ensuring we prioritise any work to repair leaks within district metered areas (DMAs) and on trunk mains within the area as quickly as possible.

We have an 'always on' approach to water saving messaging, meaning we proactively push out messaging whatever the weather. Over winter, we've created 14.8m opportunities to see and hear our water saving messaging. All year, free water saving packs are available for customers to order through the Yorkshire Water website. In line with our Drought Plan, when we crossed our normal control line, we activated our dry weather communications plan to ensure we were communicating to customers the importance of saving water during dry weather.

6.1b Trigger: Reservoirs crossed Environment Agency Early Warning trigger line

Regional reservoir stocks reached the Environment Agency early warning trigger on 22nd April 2025 and we initiated weekly discussions with the Environment Agency at this time as per our Drought Plan. Taking a continued proactive approach to the situation we also instigated our Silver (escalating from Bronze) incident meetings in line with our Company Incident Management Plan on 22nd April. At this stage, our region was not considered to be in drought but this trigger ensures we start implementing actions early to lessen the impacts if the situation worsens.

Following our regional reservoir stocks crossing the Environment Agency control line our operating strategy continued to be maximising river abstraction and minimising reservoir abstraction as outlined in Section 6.1a.

The prolonged dry weather coupled with multiple heatwaves has resulted in demand spikes with two peaks in April, one peak in May and two peaks in June, and another at the start of July. These demand peaks combined with persist dry weather has resulted in higher average demand in April, May and June.

We have been transferring raw water to support the North West from the North through Eccup-Graincliffe pumping station since the 8th May. We will continue to use this transfer whilst managing the level of the North group to ensure that reservoir stocks in the North and North West groups are in balance.

As outlined in sub-section 6.1a, river abstractions on the River Derwent, River Hull, River Wharfe, River Ouse and River Ure have been maximised, within licence constraints. River levels in April, May and June have been lower than average limiting abstraction on River Wharfe at Arthington, River Ouse at Moor Monkton and River Ure at Kilgram Bridge.

The lower river flows and the higher demand has required higher reservoir abstractions to meet supply.

We have continued the leakage focus on the North West including proactive targeted leakage detection on upstream trunk mains to ensure we are on top of any leakage on our trunk main system. DMA focus groups in place identify any areas above our minimum leakage levels, which then allows a targeted approach to locating leaks in specific areas within the North West, again with the aim to minimise leakage, demand and therefore abstraction from the North West reservoir group.

Following our Drought Plan, we also enhanced our water conservation activities. We pushed our water saving messages via a range of media and started communications with key stakeholders such as political stakeholders, inset appointees, retailers and new appointments and variations (NAVs).

As this stage we liaised with the Environment Agency over the onset of drought walkovers and preliminary permit/order preparation (including in-river works permits where required). It was agreed that a series of walkovers would be carried out to validate and cross reference data collected in 2022.

As part of our Drought Plan, we also sent out letters and emails to our key downstream abstractors and stakeholders to notify them of our dry weather escalation plans and invited them to contact us should they have any concerns, or wished to report any signs of environmental stress.

6.1c Trigger: Reservoir stock predicted to be 10 weeks from crossing the drought control line

The next trigger for implementing drought actions is when regional stocks are predicted to be 10 weeks from the drought control line. According to our Drought Plan we would escalate to Silver at this stage, but being proactive, we had already escalated to silver early. During dry periods we model reservoir stocks against forecasts of a repeat of previous droughts in our region. Modelling was commenced at the start of April; The latest assessment predicted a risk of reservoir stocks reaching the 10 weeks from crossing drought control line (4 weeks before implementing TUBs) on 16th June across Yorkshire Water's area if we had a repeat of the 1995/96 rainfall. Rainfall in April and May has been less than in the same period in 1995. As the dry weather has persisted more extreme theoretical rainfall-based scenarios, i.e., 40% of the LTA rainfall in June and 60% LTA rainfall thereafter, have been used which showed close resemblance of 1995/96 pattern. Our latest WRPR forecast using this extreme scenario indicated we have crossed the 10-week trigger on 16th June similar to 1995/96 scenario.

Throughout all this time, we have continued liaising with the Environment Agency on a weekly basis to discuss triggers reached and actions that we have been carrying out. Alongside this, we continued the preparation of environmental assessment reports and permit/order applications and also approached Natural England to ensure they were aware of the situation although there are no designated sites under the Conservation of Habitats and Species regulations 2017 as amended or Wildlife and Countryside Act which could be impacted by our North West drought permits.

Operationally we took the decision to start implementing some of the actions triggered by stocks being 10 weeks from crossing the drought control line earlier than the trigger date, rather than wait until we reached this trigger. These actions have been outlined in previous sections but are also summarised below:

- Protecting the Worth Valley supply group by reducing abstraction and transferring treated water into Blackhill SRE from Riddlesden to Blackhill SRE from Graincliffe WTW.

- Importing raw water from Washburn Valley using Eccup to Graincliffe RPS to support Nidd Valley reservoirs.
- Increasing grid water import to reduce abstraction from North West reservoir group stocks when possible. As mentioned previously this action was limited because of persistent high demand.

In addition to operational changes made we also started preparing for TUBs with the following actions:

- Recreating communication assets such as adverts and notices as well as identifying where they would be best placed to notify customers so they were ready in advance of the announcement that we would be implementing TUBs.
- Reviewing all our in house standard operating procedures for contacts relating to TUBs as well as refreshing all upskill material
- Producing FAQs to support with the management of customer interactions, with clear information given around the environmental impacts and the need for this action.
- Forecast modelling to understand potential increase in customer contacts, so that we're able to effectively resource to support any surge in demand across all our contact centre.
- Setting up of a dedicated TUBs line to direct customers to the right support. As well as increasing our social media opening hours, after reviewing historic data, to better support customers.
- Call to All across the business to pledge support for customer support activity; taking contacts, supporting at water saving events or during operational incidents across the summer, with appropriate upskills in place to support colleagues
- As part of our Drought Plan, we also enacted a plan for enhanced leakage detection through multiple methods in risk areas, that is, increase find and fix, lift and shift logger deployment for generating points of interest. We also directed focus on 'unaccounted for water' in areas with maintained high demand, but in which reported leakage had reduced beyond the levels of which demand had reduced. We switched to targeted detection of unmetered areas, that is, upstream mains with limited metering, and in areas where meters had failed.

We uplifted our water saving campaign and increased our spend on advertising. Our messages changed from green to amber week commencing 5th May and we introduced our TV advert on 17th May which features red messaging. We held weekly broadcast media interviews to keep customers up to date on our water resources position and explained how they could help play their part in reducing water usage. We ramped up the social media posts across our channels (Instagram, Facebook, X and Linked In) to increase the reach of our campaign. We supplemented bills and letters with water saving leaflets, sent text messages to hotspot areas of customers, and sent an email to our customers who have an online account with us. Alongside all this, we provided weekly updates to stakeholders including MPs, local authorities, eNGOs, retailers and NAVs.

Alongside our communications plan for managing the ongoing dry weather, we started preparations for implementing TUBs.

We have also initiated the preparation of demand side drought orders to restrict non-essential use (NEUB). This has involved reviewing the UKWIR 2023 Drought Code of Practice on Water Use restrictions and the UKWIR 2025 project on 'Assessing the Costs and Benefits of Non Essential Use Bans – A Feasibility Study', alongside identifying exceptions and FAQs. We have also been working with other water companies to understand best practice, how best to undertake a cost-benefit analysis and how to develop our communications approach.

6.1d Trigger: Reservoir stock predicted to be 8 weeks from crossing the drought control line

The 8-week trigger was initially predicted to be crossed on 7th July, as mentioned above (Section 6.1a) this was revised to 30th June, after ongoing dry weather. The extreme theoretical scenarios

modelled have shown the 8-week trigger will be breached on 30th June similarly across Yorkshire Water's area.

All the actions outlined when previous triggers have been crossed continue as part of the drought response. In addition, Yorkshire Water moved to impose a Temporary Use Ban on all customers on 11th July 2025. This was widely publicised through the advertising, mainstream media, social media and explained on the Yorkshire Water website. We also provided a dedicated phoneline for customers to get in touch with us if they had any queries. At this stage, according to our Drought Plan we would normally escalate to Gold as part of our Company Incident Management Plan. However, we took the decision to proactively move to Gold on 12th May 2025.

Yorkshire Water commenced pre-application discussions with the EA, and proactively submitted documentation early for Environment Agency review to ensure delays would be mitigated should permit applications need to be formally submitted.

6.2 Operational Practice Changes

Our target is to reduce all reservoirs in the North West as close to yield as possible by supporting via treated water (grid import) and raw water sources via the Pennine spine.

Specific actions we have taken to support the North West are as follows:

- Increased treated water support from the Grid into the North West to minimise output from Chellow Heights WTW where possible, this is dependent on demand, reservoir levels in the rest of the region and grid treatment capacity available.
- Increased raw water support to the North West from the North via Eccup to Graincliffe raw water pumping station (RPS) to allow us to reduce abstraction from the North West. The North stocks are higher than the North West following increased river pumping from Moor Monkton/Wetherby RPS when the river was available, our aim is to balance the rate of decline between the two groups using our strategic raw water links.
- Increased abstraction from the River Wharfe river level allowing, The system is set up to allow us to utilise the river as and when it becomes available, enabling us to minimise abstraction from Grimwith IRE as soon as the opportunity arises.

Worth Valley:

We have reduced production at both Sladen Valley WTW and Oldfield WTW by supporting with treated water from Graincliffe WTW, which has enabled us to bring abstraction from the Worth Valley group below yield. There are further actions we can take to reduce demand/abstraction within the Worth Valley, all of which were undertaken in 2022. These alterations require increased abstraction from other North-West reservoirs, and therefore need to be balanced with the reservoir levels in those groups. This is reviewed during the weekly water resource planning meeting, which sets the production plan for the week.

Our Drought Plan includes long term options that we will consider if the drought continues into 2026. These options will provide additional resources for public supply and will only be implemented if there is a risk that our current available resources will not be able to meet demand if the drought continues.

The decision to implement long term options will be dependent on the severity of the situation and scenario modelling to assess the potential risk. The trigger in our Drought Plan is to review the need for long term options if we are six weeks away from our regional drought control line in the second year of a drought. We are currently reviewing the scope of the long-term options and the timescales for delivery. If we were approaching the trigger for implementing long term options, this information will help determine which long-term options we should implement if required.

In line with our drought planning process, once the situation recovers, we will carry out a full review of our drought triggers and actions and their impacts. We will produce a "lessons learnt report" within six months of the situation returning to normal. This will include a review of operations and any opportunities to operate differently to improve our resilience to future droughts.

6.3 Conserving Supplies

Since crossing the NCL in March 2025 we have Increased our leakage activity within in DMAs and on trunk mains in the North West. As per section 9.1, leakage has been reduced by 6.93Ml/d, we will continue with the increased leakage focus in this area with the aim to drive leakage as low as possible, reducing demand and as a result abstraction from the reservoirs in the North West.

Actions carried out in sections 6.1 to 6.3 will reduce abstraction from the North West reservoir group conserving customer supplies where possible.

7. Customer Engagement

Our Communications Team activated our dry weather communications plan in early April to explain to our customers about why it is important to save water during dry weather. As part of our dry weather plan, we have a RAG approach to messaging which allows us to be flexible with our campaign and target the messaging so it lands with our customers. We started our 'green' adverts in early April across radio, paid social media, digital and out of home. Alongside the advertising campaign, we communicated with our stakeholders, colleagues, retailers and NAVs to encourage them to share our water saving messaging as well as raising awareness of the developing drought situation, provided an update on water resources and promoted customer side leak reduction advice. This was in addition to media and organic social media activity to support our key messages.

As the dry weather escalated, our messaging switched to 'amber' on 5th May. This was enhanced with a significant uplift in advertising spend. We have fortnightly updates for stakeholders, retailers, NAVs, Local Resilience Forums (LRFs) and river health partners. We also have undertaken a number of broadcast interviews with media, as well as utilising as many touchpoints as possible to remind customers about the importance of saving water, including our website homepage, the hold message on our customer helpline, customer letters and text messages to customers in hotspot areas. We have customer events taking place between May and August to talk to customers face to face about the importance of saving water. Our 'red' messaging was live from 17th May with our TV advert being shown. We are sharing our reservoir levels with customers on a weekly basis on social media so they can see the impact the continued dry weather is having. We will continue to raise awareness of our key messages to help customers understand why they need to use water carefully at this time of the year and provide them with behavioural nudges to make changes.

The weather (temperature and rainfall) has a particularly strong relationship with customer demand making it hard to prove any changes in demand is directly linked to communication campaigns.

Based on a few sources of information, there are some estimates available for assumed demand reduction from communications activity including London Economics' White Paper 2018 and UKWIR's 'Review of 2022 Drought Demand Management Measures – Main Report'. The London Economic White Paper states a range of measured effects of 'messaging' between 1 and 4.8% in the short term. The UKWIR review of the demand drought measures in 2022 concluded that quantitative effect of communication campaigns is difficult to determine analytically because the nature of campaigns is more subtle than TUBs (which have a clear on – off nature) and the campaigns are delivered in a continuous manner from 'background activity' to more 'explicit calls for restraint via a diverse range of media'. The UKWIR study concluded that extensive modelling undertaken did show a reduction in consumption of an average of 0.58%. However, it was noted that 'however the standard deviation of these savings is 1.14%, indicating that this result is small and highly uncertain'.

When we announced TUBs, we utilised all our communication channels to let customers know about the upcoming restrictions. These included all our advertising channels, substantive information on our website detailing the restrictions, legal notices, social media, traditional media including over 10 broadcast interviews taking place, an email to customers, updating our marketing channels, stakeholder updates and briefings, as well a detailed webinar with NAVs.

8. Implementation of a TUB

In our drought plan a TUB needs to be in place before a drought permit or order application is made between the 1 April and 1 October. A TUB also needs to be in place long enough to show if they have had a measurable impact on our demand. Throughout spring, we have continually modelled and monitored our water resources situation, including estimates of the projected dates that a TUB and drought permit / drought order triggers could be crossed.

The potential threat to water supplies is a direct result of the weather conditions throughout February to June 2025. The threat will occur if the conditions continue to be dry, or if we experience a prolonged period of high demand. We have acted in line with our drought plan triggers, preparing for a TUB in the spring when our forecasting model suggested they would be required, and implementing a TUB, in line with our drought plan and model forecasts.

In order to better reflect the dry condition we are experiencing this year and to be prepared for more adverse conditions than 1995 and 2022, we have been exploring and evaluating additional 'extreme scenarios' in our weekly WRPR forecast. One such extreme scenario assumes 40% LTA in June then 60% LTA thereafter. Our recent assessments showed that under this extreme scenario as well as the 1995 scenario, Yorkshire Water would impose a TUB on all customers on 11th July 2025.

We are using several ways of tracking the impact of the TUB on demand reduction, we have an unmeasured household sample known as the Domestic Consumption Monitor (DCM) and measured household consumption from our newly deployed Advanced Metering Infrastructure (AMI) smart meters that provide more real-time data that can be used to track the impact.

Both data sets can be used to determine the saving from implementing a TUB for both unmeasured and measured households and will enable us to identify if the impact varies dependent on how the customer is billed.

The customers on the DCM sample, circa 1000 unmeasured customers, still pay a ratable value bill but have had a meter installed so we can obtain consumption data which is then scaled to represent total unmeasured household consumption in Yorkshire used in our per capita consumption (PCC) calculations.

The graph below shows a comparison of the total daily average consumption from the customers on the DCM sample in 2022 when we also introduced a TUB. The graph also shows details of the pre and post average consumption for this sample demonstrating the impact of the TUB on demand reduction.

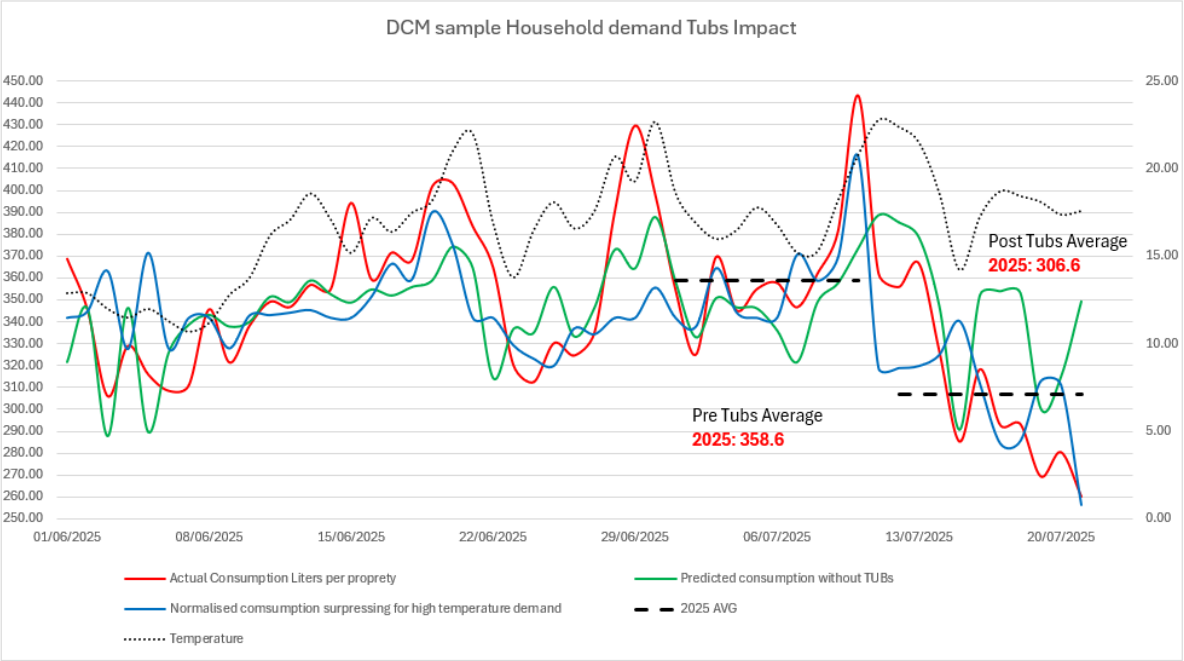


Figure 11: Profile of unmeasured household consumption from the domestic consumption monitor in 2022 and 2025 to see the impact of the temporary use restriction

You can see from the graph above that unmeasured household daily consumption from the DCM sample shows that the pre-TUBs average PHC consumption was 358.6 l/day per property and since implementation of the TUB, average PHC consumption has dropped by 51.9 l/day per property to 306.6 l/day per property.

In addition to the DCM sample, we commenced our AMI installation programme in 2024 and all new developments and DMO customers received an AMI meter. The AMI sample includes circa 120,000 customers where we have deployed smart meters across Yorkshire to date which transmit daily data and enables us to notify customers of continuous flows to help reduce leakage and provides granular consumption data that can be used to understand when and how much water our customers use each day.

The graph below shows the comparison of the total daily average consumption, the predicted consumption based on the temperature and rainfall and the normalised consumption that is actual consumption adjusted to remove the weather effect and weekends. These trends have been calculated from the AMI metered customers. There are also details of the pre and post average consumption for this sample which can be used to understand the impact of the TUB on demand reduction.

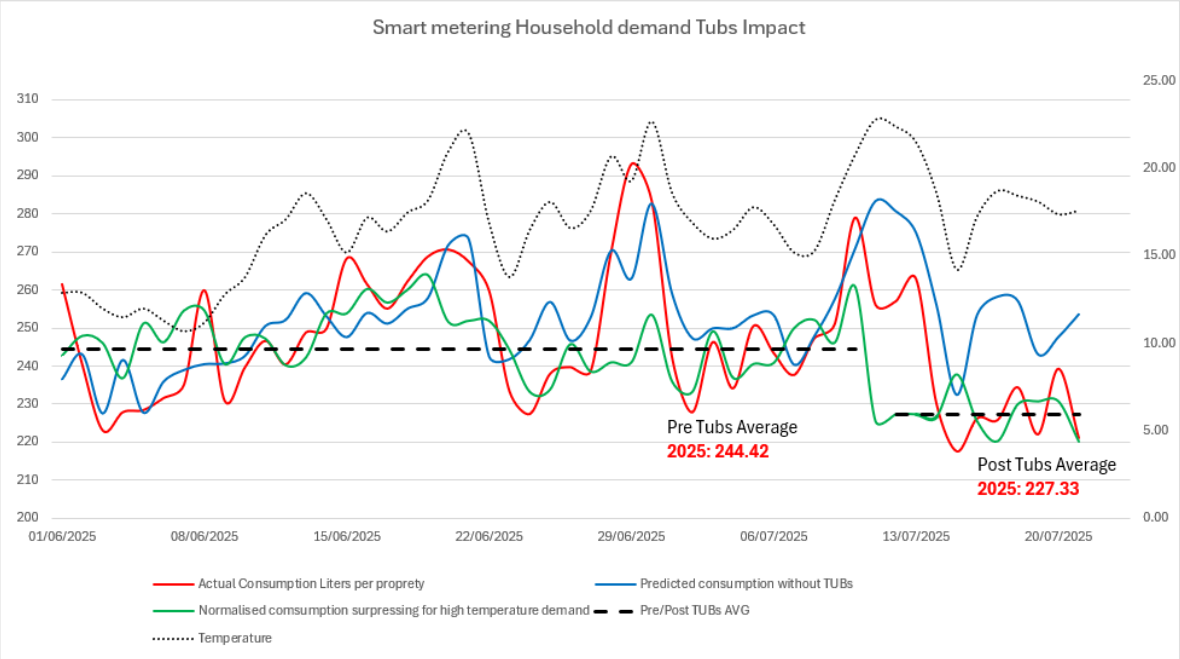


Figure 12: Profile of measured household consumption from the AMI in June and July 2025 to see the impact of the temporary use restriction

You can see from the graph above that metered household consumption from the AMI data shows that the pre-TUBs average PHC consumption was 246.82 l/d per property and since implementation of the TUB average PHC consumption has dropped by 17.92 l/d per property to 227.33 l/d per property.

In addition to these two methods, we have also reviewed regional daily demand both as a daily average and across the diurnal demand profile. Both these methods to can be used to determine the saving from implementing a TUB, helping us assess the impact at a regional level.

The chart below shows the diurnal demand profile for a sample of 25% of Yorkshire Water's supply aggregated to create a regional demand total on 11th July (1st day TUB was in force) compared to 20th June. The weather conditions on both days were very similar with very high temperatures, no rainfall and both were Fridays when the demand profile is slightly different to other weekdays.

The chart clearly shows the reduction in use during the day with a significant reduction in evening demand. This reduction equates to 78Ml/d or a 5.5% reduction in total demand. The reduction when leakage and commercial demand is removed from total demand shows an approximately 10% reduction in domestic demand.

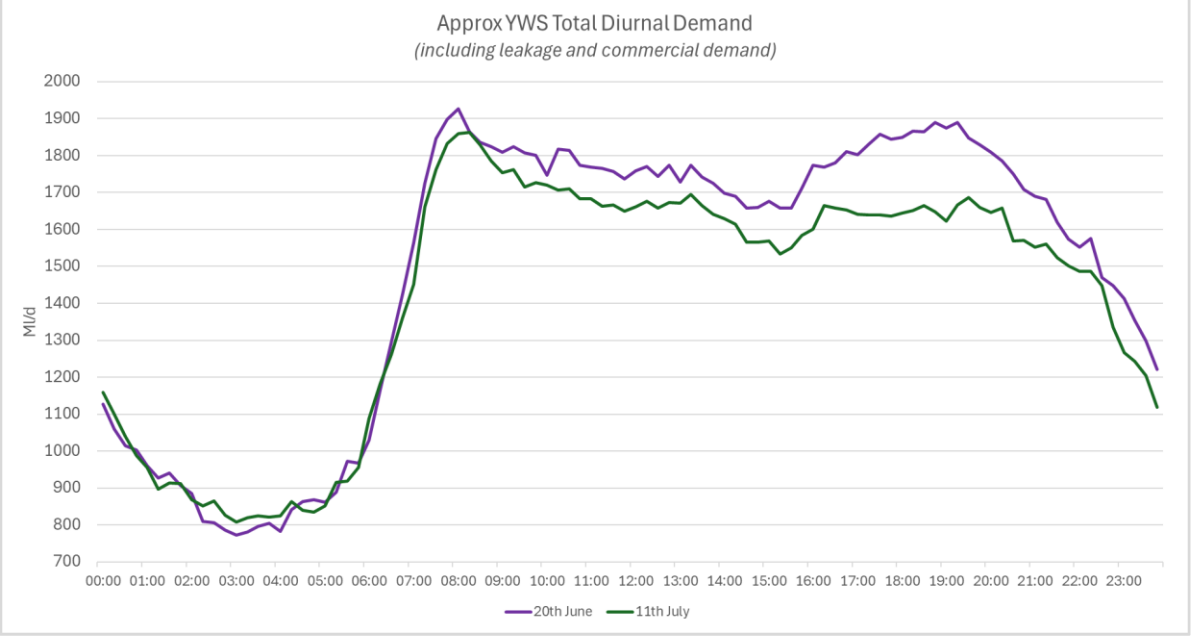


Figure 13: Profile of YWS approximate total diurnal demand pre and post implementation of the temporary use restriction

The chart below shows the daily demand before and after the implementation of the TUB. It compares the actual daily demand with the predicted demand based on weather conditions using June 2025 demands as the benchmark. This chart shows a 5% reduction in demand in dry weather when temperatures were 25C or above. This reduction when leakage and commercial demand is excluded is approximately 9%. The impact of the TUB reduced when the temperatures were lower was reduced to approximately 3% of total demand or 5% when leakage and commercial use was

excluded. Interestingly a reduction was still seen on Tuesday 15th July when there was between 10-25mm of rainfall across the region.

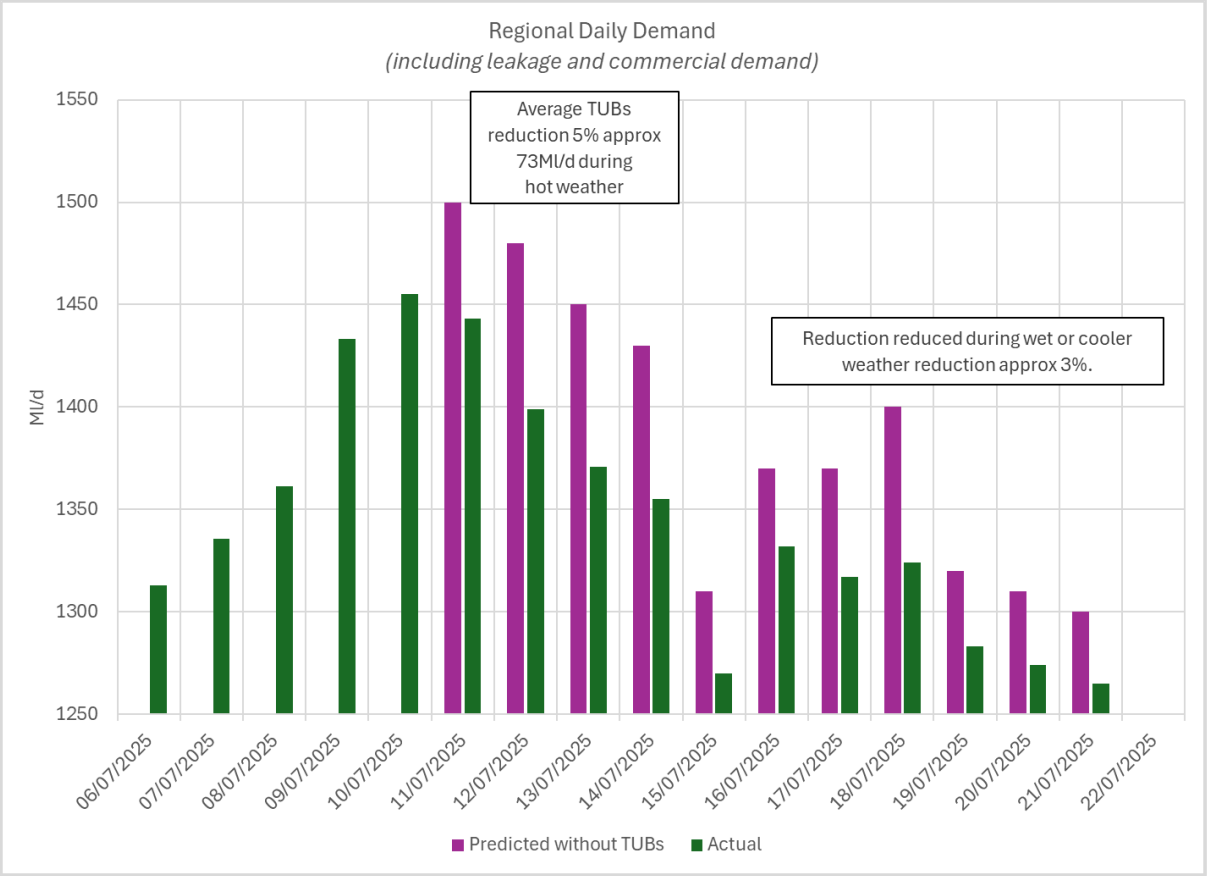


Figure 14: Regional daily demand including leakage and commercial demand actual verses predicted without TUBs

We can see from the measures of tracking demand reduction above that the introduction of the TUB, decreased temperatures and rainfall has resulted in a regional demand reduction in Yorkshire. There was an immediate and sustained reduction in demand following the intervention. Both the bottom-up (using available data for DCM and AMI samples) and top-down (regional DI) calculations align, showing a total impact of 70.1 Ml/d and 78 Ml/d respectively, which equates to approximately a 10% reduction in household demand. This suggests that the observed impact is largely driven by changes in household customer behaviour and the impact of TUBs on water consumption is more significant for unmetered customers compared to metered ones.

9. Enhanced Leakage Control

9.1 Leakage Reduction Figures

Since crossing the NCL regionally based leakage resources have been directed towards the North-West to reduce leakage over and above planned levels. We have delivered a reduction of 6.93 Ml/d from March to June in these areas. Leakage in this area is 6.24Ml/d less than it was in April – June 2022 as shown in Table 3.

Table 3: Reported Leakage levels in each Water Supply System in the North-West; March to June 25, and compared to the average levels in April – June 2022

Water Supply System (Ml/d)	March	April	May	June	April - June 22
Chellow	18.48	17.34	16.26	14.40	21.06
Embsay-Skipton	4.01	3.96	3.71	3.60	4.04
Graincliffe	5.26	5.22	4.93	4.42	6.06
Keighley	5.31	4.75	4.40	3.71	5.02
Total	33.06	31.27	29.30	26.13	36.18

Daily leakage profiles in the North West region shown in the graph below.

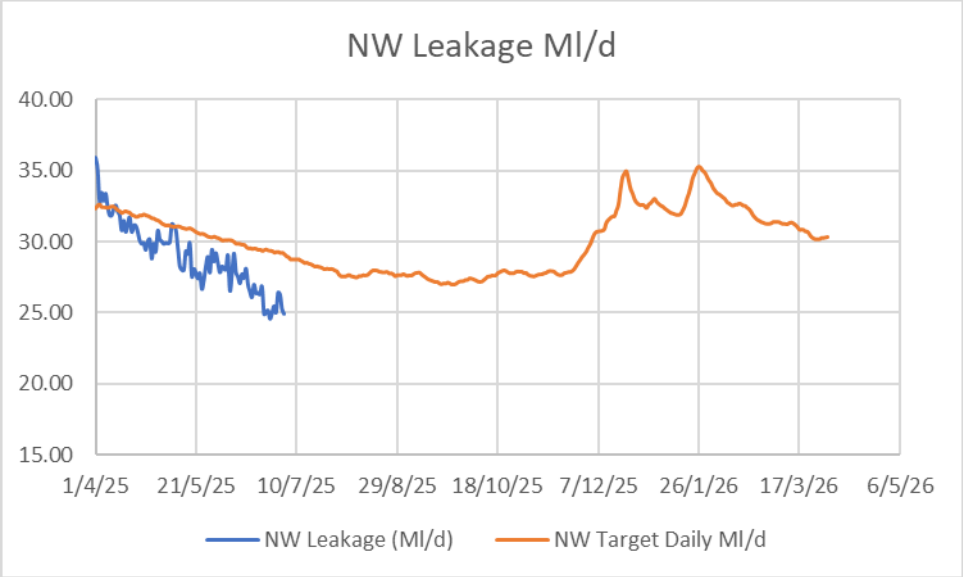


Figure 15: NW Leakage target profiles: Leakage in the NW of the Region is 25 Ml/d this is 7 ML/d lower than in 22-23 daily leakage is below target

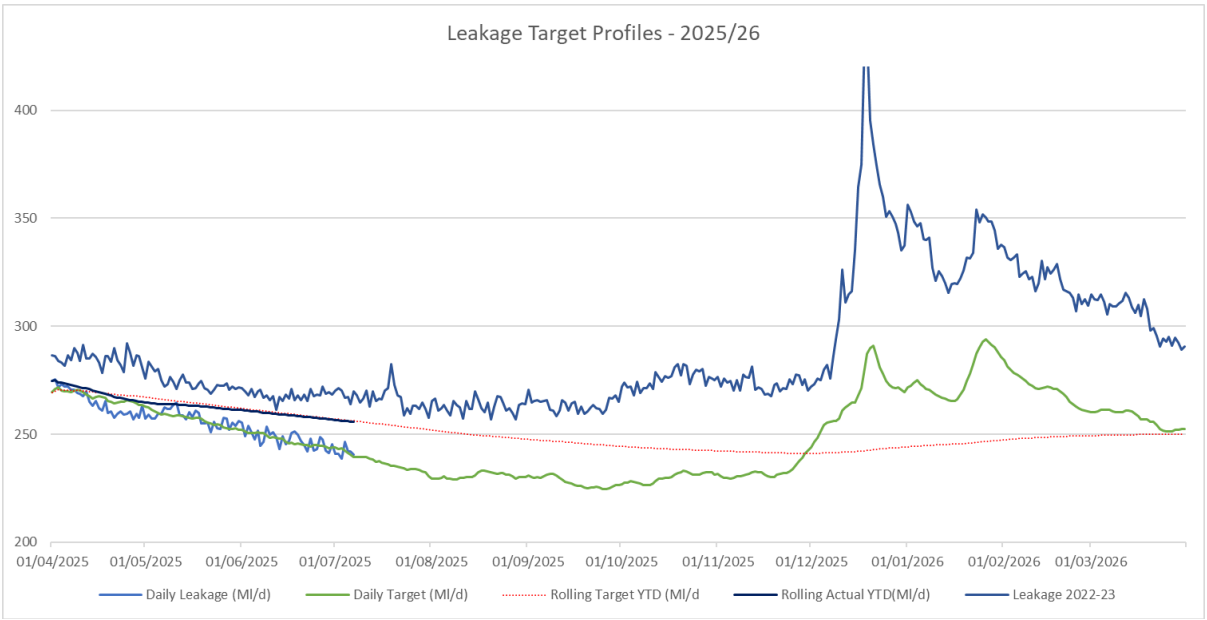


***Figure 16*: Leakage target profiles: Regionally leakage is 240 Ml/d this is on target and 29.32 ML/d below levels in 2022-23 when we last experienced dry weather conditions**

9.2 Increase in Leakage Resources

Overall leakage resources across Yorkshire have increased by 100 full time equivalent (FTE) staff since April this year. The majority of these resources are part of teams which are regionally based, these include customer side leakage, nightwork teams, upstream teams and a team which lift and shift acoustic loggers. Since crossing the NCL we have been able to shift these resources from being spread evenly across the region based on levels of leakage to being focused on the areas where water resources are more stretched. We have started evening and weekend working to increase the volume of leak detection in the area. Additional activities over and above 'business as usual' (BAU) as summarised below.

Team	**Total hours Overtime (to end June)**
Upstream & Raw Water	199.8
DMA Leakage (West + Bradford)	281.2
Customer Leakage Team	66.6
Logging Team	59.2
Total	**606.8**

Upstream and Unaccounted for Water Investigations

- Targeted Upstream (trunk main) proactive leakage detection surveys in all impacted trunk mains systems. These areas have been prioritised whereas during previous years they would have only been surveyed as part of an annual cyclical survey.
- Proactive and targeted leakage detection surveys carried out by the Upstream Leakage Team in the small number of unmetered or non-reporting district metered areas (DMAs) within the North West Water Supply systems.
- Service reservoirs, pumping stations and water treatment work sites have been proactively inspected for leakage. This includes overflows and assets within the site grounds such as valves, meters and hydrants.
- Raw water investigations are being carried out in the Worth Valley region. This survey work involves physically walking the length of the raw water mains to check for visible losses as well as physical asset checks on all available fittings. Similarly to upstream (trunk main) leakage, this is an area that would have been surveyed as part of an annual cyclical survey, but given the current position, it has now been prioritised.

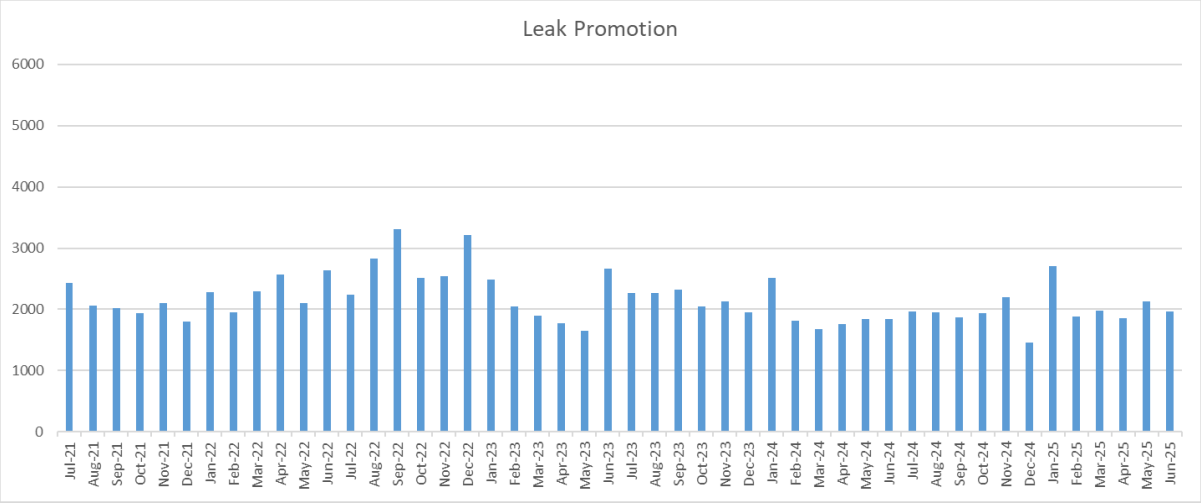
WSS	**Type**	**Status**	**Length**	**Jobs Promoted**
Keighley	Trunk	Complete	43.1	3
Keighley	Trunk	Ongoing	2.9	1
Keighley	Data	Complete	31.98	10
Graincliffe	Trunk	Complete	24.5	1
Chellow	Trunk	Complete	112.1	6
Chellow	Trunk	Ongoing	3.7	11
Chellow	Data	Complete	53.5	-
Embsay-Skipton	Trunk	Ongoing	17.3	2
Total			**289.08**	**34**

We have moved our resource of teams lift and shifting logger to focus on the North West areas this is over and above BAU activity. The 4,600 acoustic loggers installed in the last AMP remain in situ. There is additional maintenance activities being undertaken in these areas to ensure connectivity and productivity.

Activity	Areas	No of DMAs	Loggers Deployed
Lift and Shift	Keighley	14	1120
Lift and Shift	Chellow	23	1955
Fixed Acoustic	All	12	125
Total		**30**	**1365**

9.3 Find & Fix Rate

Promotion of leaks through to our R&M Service Partner M Group for repair is high for May. The graph below shows regional monthly promotion (not specific to North West). Promotion in May has been higher than the same month over the previous years.



9.4 Underground Supply Pipe Leakages (USPL) & Fix Rates

- More than 5,000 additional customer meters are being read weekly in the North West areas to proactively generate more proven continuous flow (leaks) which are then prioritised for a fix via our Service Partner.
- Specialist customer side leakage technicians are also working additional hours on a weekend to attend high priority / high volume leaks on customer owned pipes. So far, since April we have worked an additional 66.6 hours in the North West locating leaks in customers private pipes.
- We have identified and visited 50 commercial Users in the Northwest with significant water consumption, for example, farms, industrial, schools, HMPs, hospitals with 'unusual' consumption profiles to confirm leaks and manage expectations to fix at the earliest opportunity. We are also visiting all our concessionary supplied properties.
- A recent recruitment drive has increased our team of specialist customer side leakage technicians by an additional 13 FTE this includes 2 FTE dedicated to the North West group.

9.5 Public Awareness Campaigns on Leakage Reporting

We know customers rightly challenge our leakage performance particularly during dry weather so we made sure talking about Yorkshire Water's action was a clear part of our communications plan.

We issued press releases and social media posts explaining the £16m investment Yorkshire Water is making into reducing leakage over the next year, including recruitment of additional leakage inspectors, alongside a call to action for customers to report any leaks they find to us as quickly as possible.

9.6 Leakage Performance Improvement Plans

We are continuing with the enhanced leakage reduction in the North West, whilst not impacting on the region wide leakage reduction plan for Yorkshire. The additional focus areas have already been detailed in the various sections above, and include but not limited to:

- Operational leakage detection overtime – evenings and weekends
- Increase intensity of find and fix activity – promote and repair more
- 'Lift and Shift' logger deployment to generate point of Interest for leakage investigation
- Additional meter reads to identify leaks on customer props ahead of current meter read cycle
- Focus on abnormal demand at large non-household (NHH) customers
- Escalating optimisation schemes at DMA level, that is, meter replacement, DMA sizing etc
- Leak detection on raw water mains and investigation into any leaks at Yorkshire Water assets
- Pressure management solutions to reduce background leakage
- Resolving 'demand' - both consumption and leakage on concessionary supplies
- Drive leakage to at least minimal achieved threshold for the North-West – 4.9Ml/d
- Plan to overachieve reduction in area

The table below shows the minimum achieved leakage over the last 5 years, the current leakage level and therefore what we deem as 'available' leakage in these WSS to get us back to the 5 year low. Lows are typically achieved in September or October.

Water Supply System	Min Leakage Achieved Ml/d	Current Leakage Ml/d	Available Leakage Ml/d
Chellow	14.36	14.40	0.04
Keighley	2.62	3.71	1.09
Embsay/Skipton	2.55	3.60	1.05
Graincliffe	4.57	4.42	0.15

10. Outage Management

10.1 Outage Data

As described in Section 6 we meet customer demand through use of our licensed water resources, which include reservoir, river, and groundwater supplies. In the NW group when the level drops below Normal Control Line (NCL) in individual reservoirs or reservoir groups we reduce abstraction by either importing raw water or treated water to meet supply.

The treated water import is from our grid network which originates at Elvington WTW and Loftsome Bridge WTW, both of which abstract water from the River Derwent. The grid water is imported into the area the NW reservoir group supplies through a series of trunk mains and pumping stations. An outage at any of these assets will have an impact on NW reservoir stocks.

Since the start of the dry weather, there has been an outage of 29.4Ml/d at Loftsome Bridge WTW. Proportionally this outage has reduced the grid import to the NW supply area by an average of 13Ml/d total. This comprises of 8Ml/d support to Gawthorpe and 5Ml/d support to Staincliffe.

Outage data for Loftsome Bridge WTW is a mixture of both planned and unplanned outages and linked to the condition of rapid gravity filters and granular activated carbon units on site. Issues identified with the floor and coating of the filters has impacted performance and as a direct result, several units have been removed from service to facilitate required lengthy renewal works to be carried out on those units.

10.2 Sources Impacted by Outage

The sources impacted by the outage are the reservoirs that supply all the WTW in the NW area which are as follows:

- Nidd Barden Group
- Thornton Moor and Stubden Reservoirs
- Grimwith Reservoir
- Worth Valley Group
- Embsay Reservoir
- Rombalds Group

The 13Ml/d reduction in grid import because of the Loftsome Bridge WTW outage, has resulted in the NW group stocks being 2.5% lower at the end of June assuming the import would have been in place throughout April, May and June..

10.3 Outage Impact

As stated in sections 10.1 and 10.2, the impact of this outage is that we have been unable to support the North-West with a further 13Ml/d of grid water, as a result NW reservoir stocks would have been 2.5% higher at the end of June.

To resolve this outage, work on filter refurbishment on the Loftsome Bridge WTW site has been accelerated. We have increased the number of teams working on the issues and the working hours accordingly. We had reviewed alternative options to increase the flow from Loftsome Bridge WTW but unfortunately due to lead times and / or issues with compliance with Regulation 31, we were unable to source temporary units. The acceleration of the refurbishment works has meant we have been able to resolve the outage and increase Loftsome Bridge WTW output to pre-outage capacity.

10.4 Resource Impact

As stated in previous sections, the reduced output from Loftsome Bridge WTW has prevented us from supporting the North-West as we would have liked. Since crossing the NCL we could have supported the North-West with on average 13Ml/d of treated water. Without this increased support it means we have had to increase production from WTW in the NW area and therefore abstraction from the reservoirs supplying these WTW as stated in section 10.2 these are:

- Nidd Barden Group
- Thornton Moor and Stubden Reservoirs
- Grimwith Reservoir
- Worth Valley Group
- Embsay Reservoir
- Rombalds Group

11. Copy of the notices and advertisements

As required under paragraph 1 of Schedule 8 to the WRA 1991, written notice of the North West Area Drought Permit applications will be sent to third parties with an interest in the sites. These include;

- Local authorities responsible for areas affected by the permit;
- Embsay and Grimwith Reservoirs are within North Yorkshire Unitary Authority (Craven Ward)
- Silsden, Weecher, Eldwick, Hewenden, Doe Park, Leeming, and Leeshaw Reservoirs are within Bradford City Unitary Authority.
- Reva is within Leeds City Council Unitary Authority
- Yorkshire Dales National Park (Embsay and Grimwith)
- Other abstractors operating in the areas affected by the permit.
- Canal and River Trust
- Local rivers trusts and wildlife groups.
- Local angling clubs in the areas affected by the permits if granted.
- Local wildlife sites

The notice provides information on where the full application can be inspected free of charge for a period of seven days from the date of formal submission (Friday 25th July 2025). A copy of the notice is provided in Appendix 2.

The notice will be advertised on Thursday 24th July 2025 in the Bradford Telegraph & Argus, Ilkley Gazette, Craven Herald, Wharfedale Observer, and Keighley News, which are circulated in the area potentially affected if the permits are granted, and in the London Gazette, in accordance with Environment Agency guidance. If the application is successful, we will provide notice the permit has been granted in the same newspapers.

A Yorkshire Water webpage (www.yorkshirewater.com/drought-permits) has been created to provide information on drought permit applications, including copies of all supporting documents. Further permit application notices will be added on the dates we apply. The webpage includes information to explain why we are making the applications and a list of frequently asked questions.

Objections can be made by Friday 1st August 2025.

12. Public Inspection Arrangements

Documents relating to the North West Area drought permit applications have been made available, free of charge, for inspection by any interested parties from the date the notices are advertised in the Bradford Telegraph & Argus, Ilkley Gazette, Craven Herald, Wharfedale Observer, and Keighley News, and the London Gazette. The documents include a copy of the drought permit application and supporting information including environmental reports and were made available at the following locations for seven days starting on Friday 25th July 2025:

- Yorkshire Water, Western House, Halifax Road, Bradford, BD6 2SZ.
- Environment Agency, Lateral, 8 City Walk, Leeds, LS11 9AT.
- Station Road Post Office, Station Road, Haworth, Keighley, BD22 8NL. (Springhead Weir)
- Oxenhope Post Office, Station Road, Oxenhope, Keighley, BD22 9JJ. (Leeming reservoir, Leeshaw Reservoir)
- Denholme Post Office, 54 Main Road, Denholme, Bradford, BD13 4BL. (Doe Park Reservoir, Hewenden Reservoir)
- Eldwick Post Office, 90 Otley Road, Eldwick, Bingley, BD16 3EE. (Eldwick Reservoir, Weecher Reservoir)
- Menston Post Office, 52 Cleasby Road, Menston, Ilkley, LS29 6JA. (Reva Reservoir, Carr Bottom Reservoir)

- Silsden Post Office, 39 Kirkgate, Silsden, Keighley, BD20 0AJ. (Silsden Reservoir)
- Embsay Post Office, 1 East Lane, Embsay, Skipton, BD23 6QX. (Embsay Reservoir)
- Grassington Post Office, 15 Main Street, Grassington, Skipton, BD23 5AD (Grimwith Reservoir)

The post offices selected are within eight kilometres of the reservoirs impacted by the drought permit applications, named in brackets. The supporting documents are available at the Yorkshire Water Head Office in Bradford. The Environment Agency guidelines state drought permits must be advertised at the water company's head office and the office most local to the relevant area. We have a number of water treatment works nearby the permit application sites however, they are not suitable for public access, and we are therefore only able to provide the information at our head office in Bradford, which can be accessed by the public.

Objections can be made by Friday 1st August 2025.

13. Environmental Report

During the preparation of our Drought Plan 2022, a 'shelf copy' Environmental Assessment Report (EAR) was produced for each supply side drought option or group of options. The EAR provides an independent and robust assessment of the potential environmental effects of the implementation of our drought options.

The environmental assessment was conducted in accordance with Government regulations and using the Environment Agency's 2020 Drought Plan Guideline (DPG) and the Environment Agency's July 2020 'Environmental Assessment for Water Company Drought Plans- supplementary guidance', and comprised the following components:

- an assessment of the likely changes in hydrology (flow/level regime) due to implementing the proposed drought options;
- identification of the key environmental features that are sensitive to these changes and an assessment of the likely impacts on these features;
- identification of mitigation that may be required to prevent or reduce impacts on sensitive features; and
- recommendations for baseline, in-drought and post-drought order monitoring requirements.

The environmental assessment focuses on the potential changes to water availability (levels and flows) and any consequent implications for geomorphology, water quality, ecology, and other relevant environmental receptors, for example, landscape, navigation, recreation, and heritage. Cumulative impacts with other drought options are also considered.

The assessments undertaken confirm the features requiring consideration of monitoring and mitigation; which are provided in full in the Environmental Monitoring Plan (EMP).

Throughout the environmental assessment process, we have proactively engaged key stakeholders, including the Environment Agency and Natural England.

During the prolonged dry weather, dialogue was initiated with the Environment Agency and consultants were instructed to prepare 'application-ready' EARs and undertake the onset of drought walkovers. The application ready EAR, and EMP, are provided alongside this drought permit application, and have been updated in line with new DPG2025.

14. Other Options Considered

Alongside the leakage and outage management activities we have mentioned in sections 9 and 10 above, we are accelerating capital schemes and maintenance activity to minimise outage across the grid zone to maximise water availability, protect reservoir stocks and reduce demand.

If these permits are granted, we will be able to manage our system in a more resilient way. If these permits are not granted (or the decision to grant them occurs too late for us to manage supplies as if it were granted), we will have to operate according to the current licence conditions, and this may result in the overdrawing of reservoirs. We would also face the risk of entering winter with the reservoir stocks below the drought control line throughout the north west area. In respect of specific hotspots (the Worth Valley), there is also heightened risk in that public water supply could be impacted due to the higher rate of decline of stocks in this area. Additional mitigation measures are being developed to reduce the risk of this situation materialising, though these measures alone shall not alleviate the risk to the public water supply. Figure 17 below shows how stocks in the Worth Valley are declining and how critical they can be entering winter 2025 if the right actions are not taken. Note that the 2025 scenario in this figure is the 'updated extreme scenario' we have included in our assessments to better reflect the dry condition of this year; it includes 40% LTA rainfall in June and 60% LTA rainfall thereafter.

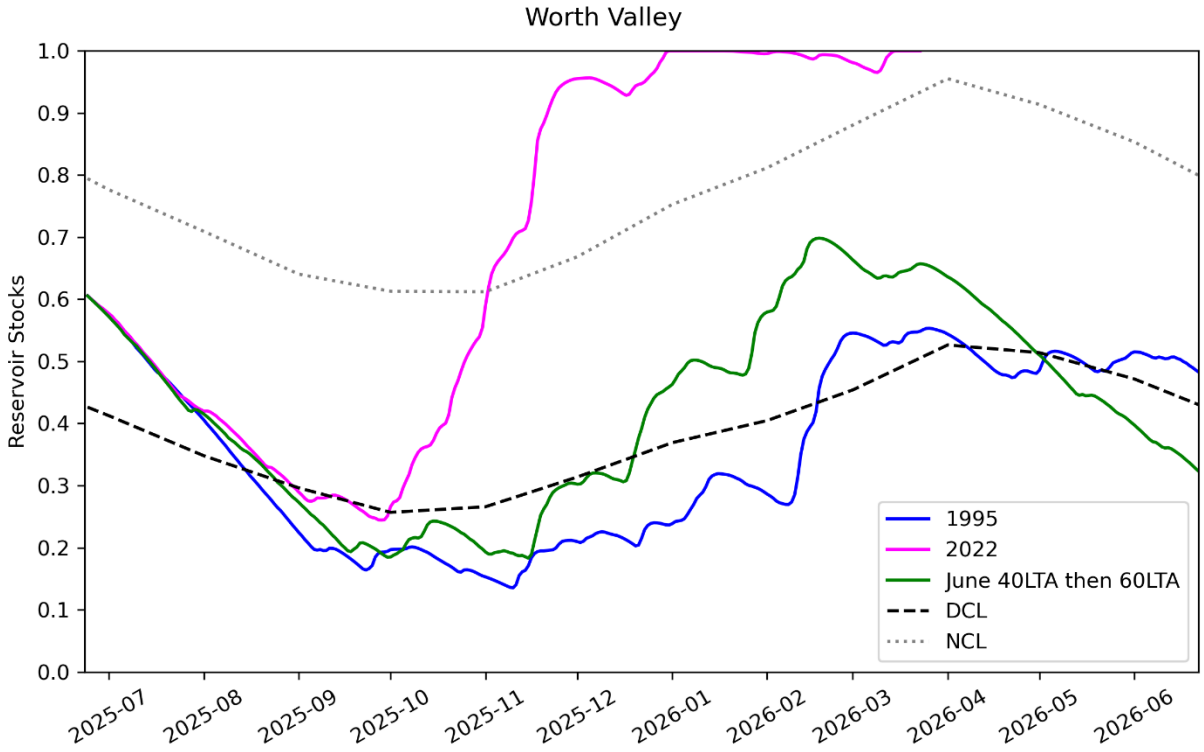


Figure 17: Projection of Worth Valley stocks assuming no rain in May and 60% long-term average rainfall thereafter compared to 1995 and 2022 scenarios

15. Consultees

15.1 Environment Agency

We initiated the formal dry-weather governance meetings with our local Environment Agency in April following reservoirs stocks crossing the Environment Agency early warning trigger line. We have continued to consult and engage weekly with the Environment Agency on the drought situation as it has escalated. We will continue to meet regularly until the situation recovers.

15.2 Natural England

Natural England were consulted throughout the process of writing our Drought Plan 2022. If there is potential for a proposed drought permit to impact on a designated area, we are required to consult Natural England prior to submitting the application. The environmental assessment of these drought options confirmed there would be no impacts on any designated sites by any of the drought options

in the North West area. The updated environmental assessment reports and environmental monitoring plan were shared with Natural England as part of the pre-application process.

15.3 Local Rivers Trust & Wildlife Trusts

The environmental assessment of these drought options confirmed there would be no impacts on any Local Wildlife Sites by any of the drought options in the North West area. The results of the assessment can be found in the accompanying EAR.

15.4 Navigation Authority Consent

We do not require navigation authority's consent for most of the North West Area drought permit applications. The only consent required is in relation to the Embsay Reservoir Drought Permit which, if implemented, would result in a reduction in compensation flows into Embsay Beck and consequently Eller Beck which feeds the Leeds and Liverpool Canal at Skipton. The Canal and River Trust (CRT) has confirmed that they are happy for us to apply for the Embsay Reservoir Drought Permit. A copy of their email confirmation is included with this application.

15.5 Internal Drainage Board

We have notified the relevant Internal Drainage Boards of our intention to submit drought permit applications. We have been giving fortnightly updates since week commencing 28th April about our water resources position.

15.6 Retailers

An email was issued to all active in area retailers on 24th April and 2nd May raising awareness of developing drought and providing advice on water efficiency and customer side leak reduction. The Retailer-Wholesaler Group (RWG) hosted a drought webinar for retailer contract managers on 28th May outlining the current situation nationally, with updates from all wholesalers. Further web events will be hosted monthly, with a fortnightly update email to retailers advising of any additional communications in the meantime.

A webinar was hosted on Friday 4th July providing advance notice of Yorkshire Water's intention to impose a TUB. Those who have returned a completed assurance statement have received a slide pack with all info relating to the TUB and timeframes along with detailed FAQs. Those who didn't attend the webinar have been contacted separately by phone or email with the same information.

15.7 NAVs

We have notified all active in-area NAVs on 24th April, and thereafter fortnightly, raising awareness of current water resource status developing drought and providing advice on water efficiency and customer side leak reduction. A meeting was held on 19th May with all NAVs and three other water companies (United Utilities, Southern Water and Severn Trent) to raise awareness of the drought situation and to drive closer co-ordination and collaboration of drought communications across water company areas. A further preparation webinar was held with NAVS on 30th May, co-hosted by Yorkshire Water and United Utilities.

A webinar was hosted on Thursday 3rd July providing full updates to NAVs including our intention to impose a TUB. All NAVs have returned a completed assurance statement post webinar have received the slide pack, HH FAQ document, TUBs information leaflet which can be dual branded, a copy of the legal notice we are publishing along with the list of publications and a formal legal notice send to the Company Secretary for each respective NAV.

15.8 Objections

No objections have been raised to date.

16. Appendices

Appendix 1: Copies of existing abstraction licences, statutory instruments or Local Acts governing the abstraction, or discharge of compensation water relating to the permit

Appendix 2: Copies of the notices and advertisements required under paragraph 1 of Schedule 8 to the WRA 1991.

Copies of both served and published notices should be sent as quickly as possible to the Environment Agency

Appendix 3: Draft Drought Permits