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# WATER RESOURCES MANAGEMENT PLAN
# ANNUAL REVIEW 2024

June 2024

**Jim Barker, Head of Water Resources**
Portsmouth Water Ltd, PO Box 8, West Street, Havant, Hampshire, PO9 1LG

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# 1 EXECUTIVE SUMMARY

The Water Act 2003 places a duty on all water companies to prepare an updated Water Resources Management Plan (WRMP) every five years. As part of the WMRP process, it is a statutory requirement to review progress against the Plan and report it to the Secretary of State (SoS) in an Annual Review.

Our Final WRMP19 was published in November 2019. This was revised and republished in December 2022 to reflect both our current company position, and advances in industry-wide approaches to improve data forecasts. Our current and published WRMP is therefore our 'Revised WRMP19' (rWRMP19). This Annual Review 2024 (AR24) sets out our performance for 2023-24 in comparison to our forecast positions for the same year in our rWRMP19.

The key headlines within this Annual Review are as follows:

We have seen an increase in Distribution Input (DI) of 2.2% in the annual average scenario and 1.8% in the critical period scenario, when compared to the rWRMP19 forecasts.

This is primarily due to outturn leakage levels being 3.89 Ml/d higher than our rWMRP19 target. However, this performance is a 4 Ml/d improvement on the outturn value for the previous year (2022-23) and we continue to invest a significant amount of money and resources to recover our performance to meet our year one, AMP8 targets.

Within the DI calculation:

- We are within 1.3% of our rWRMP19 household PCC target of 152 l/h/d for the annual average scenario and achieved 6 l/h/d below target in our critical period scenario. Our 2023-24 outturn PCC is also comparable to our WRMP24 forecast once it has been uplifted to represent a 'dry year' scenario.
- We are targeting the installation of additional in-charge meters in 2024-25 to ensure that our rdWRMP24 AMP7 target of 38.9% meter penetration is achieved. In addition, we have proactively installed 20,000 meters which customers are not currently being charged through. Providing support and with due consideration to customer circumstance we will look to transition these into in-charge meters when we are legally able to do so.
- We have seen some promising results from non-household water efficiency projects, so far totalling the equivalent saving of 460 household meter installations.

Our treatment works and operational use losses have reduced by 54% since last year, and we completed our Site O AMP7 scheme six months earlier than planned. However, we have seen a decrease in the total water available for use (total WAFU) of 7.3% in the annual average scenario and 8.7% in the critical period when compared to the rWRMP19 forecasts. This has been primarily due to:

- The number of sites that have been offline for greater than 6 months, leading to a write down of base Deployable Output (DO).
- An increase in outage (sites offline for <6 months) compared to the rWRMP19 forecasts and previous Annual Reviews. *Unplanned* outage has increased due to high groundwater level conditions and *planned* outage was higher because the benign summer conditions allowed us to undertake significant maintenance works without risk to customers.

Ultimately these factors have led to a negative outturn Supply Demand Balance (SDB), which implies that should 2023-24 have become a 1-in-200 year drought event, we would not have been able to supply some of our customers with water.

However, if in the course of the year our monitoring had shown we were entering a period of drought, we would have taken actions to fast-track sites back into supply and avoided undertaking maintenance works during the critical period (the peak summer demand period). Furthermore, under those developing

drought conditions the unplanned outages associated with high groundwater level conditions would not have occurred.

However, the purpose of this annual review is to understand how we are performing against our rWRMP19, which is based on a defined “dry year” scenario (1-in-20 year level of demand and 1-in-200 year level of supply). The conclusion with respect to our performance in 2023-24 is that if Southern Water had requested the full 30 Ml/d bulk supply everyday throughout the year in a 1-in-200 drought event, the SDB would have been in deficit.

The report below gives the detail behind this conclusion. Going forward, we are committed to working with our regulators and stakeholders to address the perceived risks within our existing supply demand balance. This includes 6 monthly meetings to review our progress. We are expecting the supply demand balance to improve for next year (2024-25) as we:

- Continue to reduce leakage and install household ‘in-charge’ meters.
- We recognise the full year benefit of the Source O deployable output improvement scheme.
- Complete the Source C deployable output improvement scheme.

Furthermore, our rdWRMP24 was submitted in August 2023 which is our most ambitious and collaborative plan yet. Through delivering that plan, we will become more resilient to increasingly severe drought events, at the same time as reducing our reliance and impact upon the precious chalk-based environment that characterises our supply area.

# 2 GENERAL

## 2.1 Introduction

The Water Act 2003 places a duty on all water companies to prepare an updated Water Resources Management Plan (WRMP) every five years. As part of the WMRP process, it is a statutory requirement to review progress against the Plan and report it to the Secretary of State (SoS) in an Annual Review.

Our Final WRMP19 was published in November 2019. This was revised and republished in December 2022 to reflect both our current company position, and advances in industry-wide approaches to improve data forecasts. Our current and published WRMP is therefore our 'Revised WRMP19' (rWRMP19) as found on our website[1]. This Annual Review 2024 (AR24) sets out our performance for 2023-24 in comparison to our forecast positions for the same year in our rWRMP19.

Our draft WRMP24 was published for consultation in October 2022. A subsequent revised draft WRMP (rdWRMP24) and Statement of Response (SoR) was published in August 2023. At present, we are awaiting formal permission from the Secretary of State to publish our final WRMP24. As requested by the Environment Agency, we have compared our performance in the context of our 2023-24 forecasts within the rdWRMP24.

Updated guidance published in March 2024 sets out the content of the Annual Review and the submission procedure. In accordance with this guidance, our review:

- Reports on the progress and delivery of our rWRMP19,
- Highlights any changes that have been made since the development of the rWRMP19,
- Reports on the actions that the Environment Agency and Defra have asked us to work on after the publication of our rWRMP19,
- Reports an overall summary of our supply-demand (SDB) situation if 2023-24 experienced a 1 in 200 year drought using outturn values as per the guidance,
- Provides a forward-look for our WRMP programme, and the position we are currently in compared to the first reporting year of our WRMP24.
- An addition to the guidance this year is an option to also report uplifted outturn values that will represent a Dry Year Annual Average (DYAA) scenario using the same uplift methodology as applied within our rWRMP19. This information is provided in the data tables in Appendix A.

We have used these 'uplifted' values alongside further adjustments to other components to create a more realistic view of what our SDB would have been in a 1 in 200 year event.

Our Annual Review also monitors our progress in delivering the National Framework measures for England, such as reductions in per capita consumption, leakage and increases in water supply.

## 2.2 Supply Area

Portsmouth Water is a long established, community focused water company, with a strong history of industry leading customer service. Our supply area is made up of a single Water Resource Zone (WRZ). The distribution system includes significant strategic treated water storage and a spine main that runs East to West across our region. This system ensures that all our customers in the supply area shown in Figure 1 experience the same level of service.

[1] https://www.portsmouthwater.co.uk/wp-content/uploads/2023/01/Portsmouth-Water_rWRMP19_Dec_2022.pdf


*Figure 1: Portsmouth Water supply area*

There have been no changes to the company area or WRZ configurations since we published our rWRMP19. However, some customers on new housing estates are supplied by New Appointments and Variation companies (NAVs) which are treated as separate bulk supplies within this Annual Review.

Throughout the last plan period, we have had a changing role in the supply of water to the Southeast. We already support our neighbouring water company, Southern Water Services (SWS), with bulk supplies of wholesome water so that they can reduce their abstractions on world renowned chalk rivers. Additionally, we are developing Havant Thicket winter storage reservoir in collaboration with Southern Water, which is due for completion in 2031-32 to enable a further bulk supply into Southern's Hampshire zone to help further reduce abstraction from these rivers. Our rdWRMP24 explores further uses of the reservoir to maximise its potential as a major water doner to support the further reduction of Chalk groundwater and surface water abstractions across the region.

## 2.3 Water Resource Position

We abstract the majority of our water from groundwater sources and therefore, groundwater levels are the best indicator of the water available from the chalk aquifer. We monitor groundwater on a daily basis at Idsworth Well and compare the level to the 30 year long term average (LTA) (see Figure 2).

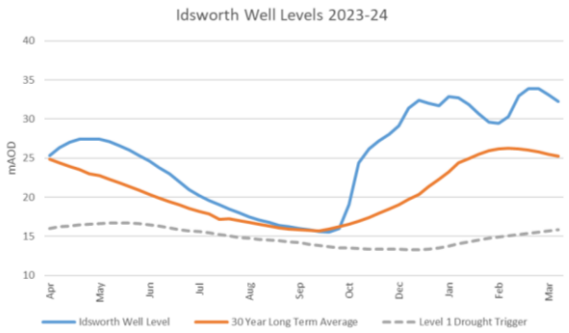



*Figure 2: Groundwater levels against LTA and Level 1 Drought Trigger*

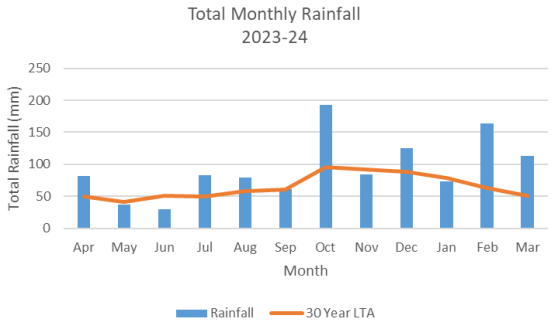



*Figure 3: Total monthly rainfall against LTA*

As seen in Figure 2 groundwater levels did not drop below the level 1 drought trigger. This is due to both the mild temperatures and the wet conditions experienced for most of the year, with rainfall recorded as above the LTA for the reporting year as shown in Figure 3.

## 2.4 Levels of Service and Drought Planning

When dry weather conditions persist, causing groundwater levels to reduce below predefined trigger levels, we would implement our drought plan. Continued dry weather would result in steady escalation of restrictions designed to reduce the household and commercial demand for water. These restrictions range from Temporary Use Bans (TUBs) such as bans on the use of hosepipes, to Non-Essential Use Bans (NEUBs, also referred to as ordinary drought orders) that would start to impact commercial activities in the local area.

As a last resort, water companies may also ask for emergency drought orders to allow the use of standpipes and rota cuts to further reduce the demand for water. These actions are part of the Emergency Plan and not the Drought Plan. We have agreed with our customers the frequency at which demand restrictions might need to be implemented. The agreed Levels of Service (LoS) are:

- Temporary Use Bans to be implemented no more frequently than in a 1 in 20 year drought event.
- Non-Essential Use Bans to be implemented no more frequently than in a 1 in 80 year drought event.
- Emergency Drought Orders to be implemented no more frequently than in a 1 in 200 year drought event.

In advance of the implementation of TUBs, we would be engaging with our customers to make them aware of the implications of persistent dry weather conditions on water resources and would ask them to voluntarily reduce their water consumption. When approaching customers, we would use a full range of media types to efficiently reach as many sections of our customer base as possible.

Our most recent drought plan was published in April 2022[2]. The structure and tone of the plan was changed to meet the evolving requirements and guidance from regulators (Defra and Environment Agency, December 2020). Having been required to enforce our drought plan during the summer of 2022, we reviewed our drought plan. This review is published as an appendix alongside our rdWRMP24[3]. We concluded that our drought plan was effective during the time it was enforced and have not revised the current version.

### 2.4.1 Ongoing drought plan programme of works

#### 2.4.1.1 SWS Drought Trigger Review Project

A project was commissioned by SWS to review its modelling, timing and drought triggers including for the Lower Itchen source Drought Permit which they use to maintain their bulk supply from us. The final draft report for the 'Drought Trigger review for the Test and Itchen'[4] was completed in February 2022. A further joint assessment and validation report[5] was produced at the request of the Environment Agency which concluded that the changes to the SWS drought trigger levels would not pose a risk to our current 1 in 20 year LoS for TuBs. Whilst SWS has subsequently updated its approach to drought triggers in early 2024, our assessment is that the risk to our stated LoS remains low.

[2] https://www.portsmouthwater.co.uk/wp-content/uploads/2022/04/Final-Drought-Plan-2022.pdf
[3] https://www.portsmouthwater.co.uk/wp-content/uploads/2023/09/1H-rdWRMP24-Appendix-1H-2022-Drought.pdf
[4] Drought Trigger review for Test and Itchen, Final Draft Report, Atkins 24th February 2022.
[5] Drought Plan 2022 River Test and River Itchen Drought Triggers, Southern Water Technical Note

We expect to publish an addendum to our Drought Plan 2022 later in 2024 to provide further information. However, we are currently waiting for SWS to receive permission from SoS to publish their Drought Plan in 2024, so that we can ensure our addendum aligns with the SWS Drought Plan.

We will continue to work closely with SWS on drought triggers as we begin to develop our next plans (Drought Plan 2027 and WRMP 2029).

#### 2.4.1.2 SEA / HRA environmental assessments update

We included the consideration of the North Arundel drought permit within our Strategic Environmental Assessment (SEA) for our WRMP19. This identified uncertain potentially negative impacts on biodiversity, water quality and quantity due to the likely exacerbation of the effects of drought on the local water system. We have since submitted an updated SEA[6] alongside our rdWRMP24 which reassesses the permit (referred to as the 'Source S permit' in our WRMP24). A key conclusion is that there is a Medium risk for the temporary increased abstraction from the Chichester Chalk to be WFD non-compliant and, therefore, further assessment is required to ensure that the additional abstraction does not negatively impact under the quantitative GWDTE, dependent surface water body and water balance tests.

Mitigation includes further investigation/modelling (including for WFD assessment) required to improve certainty of effect on receptors including designated sites and dependant species. We will be investigating this drought permit during AMP8.

We expect to publish an addendum to our Drought Plan 2022 later in 2024 to provide further information on the rdWRMP24 environmental assessments.

[6] https://www.portsmouthwater.co.uk/wp-content/uploads/2023/09/Appendix-1D-Portsmouth-Water-rdWRMP24-SEA.pdf

# 3 SUPPLY

In this section we review the elements of our balance that collectively account for our supply capability, indicated by our Water Available For Use (WAFU). WAFU is calculated by subtracting the Outage, Bulk Supply Exports and Losses from the Deployable Output value. A summary is provided in Table 1 below. We identify the outturn performance we have achieved from our sites against the 1 in 200 year scenario of our rWRMP19 as per the guidance for each of the components (e.g. theoretical maximum for the bulk supplies and total outage which includes both unplanned and planned). These are the values shown in the data tables in Appendix A.

| Dry Year Supply 2023-24 assumptions (WRMP tables reference) | Annual Average (Ml/d) | | Critical Period (Ml/d) | |
|---|---|---|---|---|
| | rWRMP19 | Outturn | rWRMP19 | Outturn |
| **Deployable Output (7FP)** | 213.49 | 206.29 | 264.20 | 253.44 |
| **Outage (10FP)** | 6.70 | 8.93 | 6.40 | 13.12 |
| **Bulk Supply Exports (6FP)** | 30.00 | 30.80 | 30.00 | 31.06 |
| **Treatment works losses (9FP)** | 2.40 | 4.82 | 2.40 | 3.48 |
| **Total Water Available for use (WAFU) (13FP)** | **174.39** | **161.74 (-7.3%)** | **225.40** | **205.78 (-8.7%)** |

*Table 1: Total WAFU using theoretical maximum for Bulk Supplies*

As shown in Table 1, our outturn WAFU is 12.65 Ml/d less than predicted in our rWRMP19 WAFU during the annual average scenario, and 19.62 Ml/d less for the critical period scenario.

The following sections provide detail on the various contributing components of our supply capabilities summarised in the table above and explain our outturn values against rWRMP19 and in the context of our rdWRMP24.

## 3.1 Deployable Output

### 3.1.1 Calculation of outturn DO

The total company Deployable Output (DO) as stated in the rWRMP19 indicates how much water our sources could supply in a 1 in 200 year drought event. In line with the WRMP guidance, if there are any sources that have been offline for over 6 months of the reporting year then we subtract that individual source DO benefit for a 1 in 200 year drought (as per the rWRMP19) from the total rWRMP19 WRZ DO to obtain the outturn DO value.

There were five sites that were unavailable throughout the full reporting year, which means that 100% of their DO as stated in the rWRMP19 is removed.

Further detail on those five sites are as follows:

- Site D and G have been through extensive maintenance programmes and new equipment has been installed on site. However, to protect drinking water safety standards we still need to obtain water quality samples to assess the raw water to confirm the correct classification. The sources will be returned to service, but in the meantime, have been taken off the DO as per the guidance.
- Site E has experienced long term outages due to water quality issues since 2017 and has subsequently been removed for the outturn DO for 2023-24.
- Site I has been offline for the full reporting year due to a positive cryptosporidium detection. We are designing and planning the installation of UV treatment before returning the site to service in AMP8.

- Site S has been through an extensive maintenance programme and new equipment has been installed on site. The source will be returned to service, but in the meantime, it has been removed from the outturn DO as per the guidance.

Site O was offline up until the end of July 2023. It was brought back online in August 2023 and we completed our rWRMP19 AMP7 scheme with the installation of Amazon Filters (enhancing DO in September), six months ahead of schedule. Further details on this scheme are provided in section 3.5.1.3. The site was subsequently taken offline in December 2023 for a UV build and commissioning as part of a wider planned project.

Although the site was not offline for 6 consecutive months in the year, the four months at each end of the year were part of longer duration events which were above six months. These events are therefore accounted for as DO reductions rather than outage.

To account for the increase in DO due to the AMP7 scheme implementation, and the fact that the site has been offline for a number of months, we have adjusted the Annual Average and Critical Period DOs for Site O using the information presented in Table 2. The adjusted DYCP for Site O is zero, because the critical period for 2023-24 was in June 2023, at which point the site was offline, whereas the adjusted DYAA is the averaged total over the year.

| Scenario | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Adjusted DO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DYAA (Ml/d) | 0 | 0 | 0 | 0 | 3.00 | 8.20 | 8.20 | 8.20 | 0 | 0 | 0 | 0 | **2.30** |
| DYCP (Ml/d) | 0 | 0 | 0 | 0 | 1.60 | 7.90 | 7.90 | 7.90 | 0 | 0 | 0 | 0 | **0.00** |

*Table 2: Monthly output assumptions for Site O during 2023-24 and calculated DYAA and DYCP DOs*

To calculate the overall DO reduction associated with Site O, the adjusted DOs were compared to the rWRMP19 DO values of 3.00 Ml/d (DYAA) and 1.60 Ml/d (DYCP). This results in DO **reductions** of 0.7 Ml/d for DYAA and 1.6 Ml/d for DYCP, relative to the rWRMP19.

Table 3 summarises the DO reductions for each site and demonstrates calculation of outturn DO for 2023-24.

| Dry year site DO assumptions 2023-24 | DYAA (Ml/d) | DYCP (Ml/d) |
|---|---|---|
| **rWRMP19 Deployable Output (7FP)** | **213.49** | **264.20** |
| Site D | -0.90 | -1.80 |
| Site E | -0.40 | -0.46 |
| Site G | -1.60 | -2.80 |
| Site I | -1.50 | -1.80 |
| Site S | -2.10 | -2.30 |
| Site O | -0.70 | -1.60 |
| **Outturn DO value for 2023-24** | **206.29** | **253.44** |

*Table 3: Outturn Deployable Output for 2023-24*

### 3.1.2 Implications for Deployable Output in WRMP24

For rWRMP19 and draft WRMP24, the values were derived using our standalone Pywr water resources model. For the rdWRMP24 we have recalculated deployable outputs and climate change impacts using our joint Hampshire Pywr model, which was developed with Southern Water and contains an improved representation of the River Itchen. The WRMP24 baseline DOs include the benefits from the AMP7 supply

schemes. We are on track to deliver the final schemes before the end of AMP7 and as such the risk of supply-side scheme delivery impacting the WRMP24 is considered to be low.

The sites in Table 3 are expected to be operational again in early AMP8, except for Site E. This has a small DO relative to the Headroom Allowance in our WRMP24 and does not have a material impact on the security of supplies to our customers.

## 3.2 Outage

### 3.2.1 Summary of outturn outage

In accordance with the WRMP outage guidance, outage events over 24 hours but less than 6 months should be recorded as outage rather than as a reduction in DO (as described in the section above). Table 4 shows our outturn outage for 2023-24 and the sections below provide further information on the planned and unplanned outages that we have experienced.

| 2023-24 Outage | DYAA (Ml/d) | DYCP (Ml/d) |
|---|---|---|
| **Unplanned** | 4.12 | 4.99 |
| **Planned** | 4.81 | 8.13 |
| **Total** | **8.93** | **13.12** |

*Table 4: Outturn Outage for 2023-24*

### 3.2.2 Unplanned outage

Over 60% of the unplanned outage came from three sites; Site H, Q and R as a result of valve issues. Water ingress from prolonged very high groundwater levels caused the valve actuators to fail as they are located in below ground chambers. Other instruments located below ground level have also suffered the same fate at these sites and several others, contributing further to the unplanned outage. Other valves located above ground in the UV buildings have also required significant capital intervention as part of the outage management.

Site A has experienced a couple of unplanned outage events this year namely due to some contamination on site at the start of January, and an incident near the pumping main in mid-January which resulting in the site being turned off. These events contributed to just over 10% of the total unplanned outage for the year.

The remaining unplanned outage can be attributed to various reasons including communications loss combined with low chlorine levels at Site R, an outage following a high velocity flush at Site C, and UV dosing issues and UV quarantine valve issues at Site H.

### 3.2.3 Planned outage

The planned outage experienced in the year has been part of our capital maintenance programme. Site A has been offline for contact tank maintenance and Site F for well head improvements.

These activities would not have taken place if we were in a drought event (with DWI approval) to avoid any interruptions to supply. Therefore, in an actual 1 in 200 year drought scenario, these outages would not have occurred. However, we have included them in our Supply Demand Balance (SDB) in accordance with the guidelines. Section 6.2 explores this further.

## 3.3 Bulk Supplies

### 3.3.1 Summary of outturn bulk supplies

We have two types of external potable bulk supplies, one of which are the exported bulk supplies to SWS, and the others are exported bulk supplies to New Appointments and Variations, otherwise known as NAVs. These are included as a combined total in the data tables with values of 30.80 Ml/d for annual average and 31.06 Ml/d for critical period. The sections below provide further information on each type of bulk supply.

### 3.3.2 Southern Water Bulk Supplies

#### 3.3.2.1 Bulk supply contracts

We currently operate two bulk supplies to SWS. One is feeding east into their Sussex Zone, with a capacity of 15 Ml/d and a 1 Ml/d 'sweetening flow' maintained all year. The volume is contracted on a 'reasonable endeavours basis', with notice periods to ramp up/down supplies.

Our second bulk supply sends water west into SWS Hampshire Zones. It has a capacity of 15 Ml/d if required, but a 'sweetening flow' of just 0.4 Ml/d all year round. The volume is contracted on a reserved volume basis. Notice periods are 6 months to reserve the water for business as usual (BaU) purposes, or at least 5 days due to unforeseen circumstances.

We will always provide the water to SWS if we are able without jeopardising the supply to our own customers (due to site outage or other network constraints).

When the current contractual arrangements are due for renewal, we will negotiate the terms with SWS that reflect the future indications of the WRMP24. We prepared a joint appendix with SWS which sets out all joint commitments and common understandings and can be found on our website as part of our published rdWRMP24[7]. This is currently being updated for SWS's re-consultation on its WRMP24 later this summer and once we are given permission to publish our final WRMP24, this will include a final version of the appendix.

In the meantime, our rWRMP19 assumes that the maximum bulk supplies are supplied constantly throughout the planning horizon. The data tables within this Annual Review also assume this theoretical maximum. However, the section below describes the actual volumes supplied to Southern Water.

[7] https://www.portsmouthwater.co.uk/wp-content/uploads/2023/09/1C-rdWRMP24-Appendix-1C-Southern-Water-Portsmouth-Water-Common-Understanding.pdf

### 3.3.2.2 Outturn Southern Water Bulk Supplies

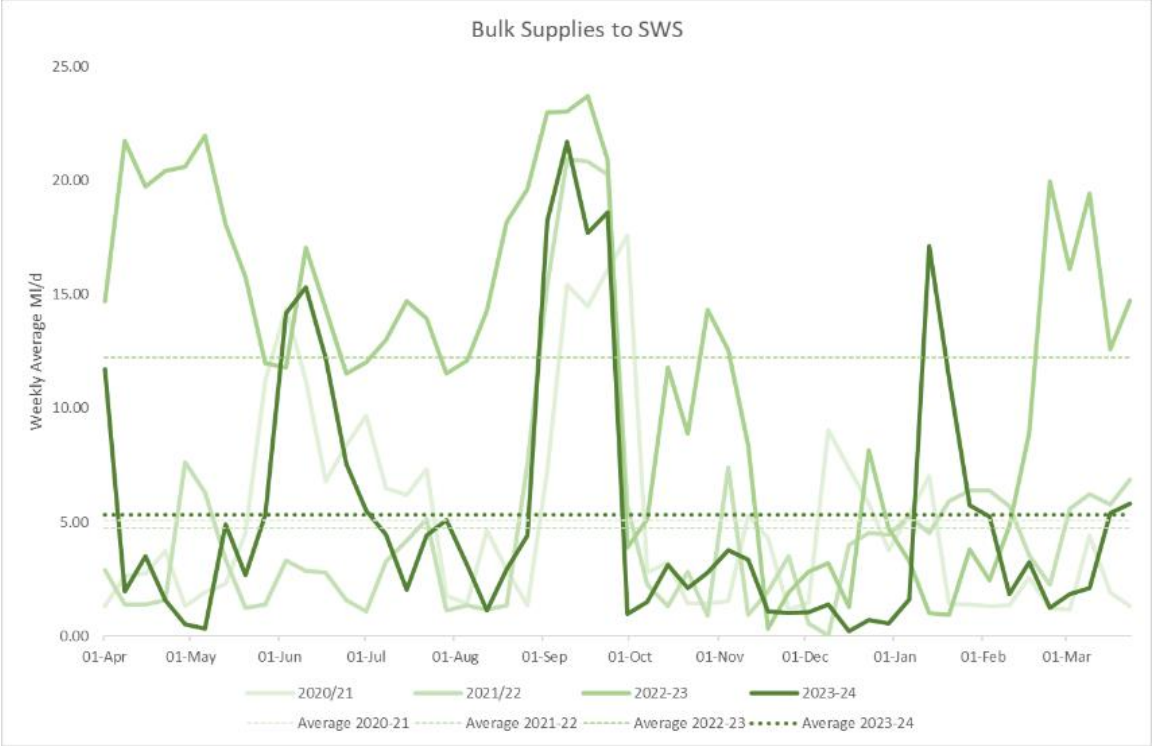



*Figure 4: Outturn bulk supplies to Southern Water 2023-24.*

**Error! Reference source not found.** shows the total amount of potable water exported to SWS this year, compared to the previous AMP7 years. This year's annual average is 5.33 Ml/d. Despite levels reaching a maximum weekly average of 21.71 Ml/d in September, the critical period amount corresponds with the DI peak week in June. The critical period bulk supply amount is therefore 15.69 Ml/d.

The average yearly volume has decreased significantly in comparison to last year and is now similar to previous AMP7 levels. This was due to the drought conditions in Hampshire during the summer of 2022 which resulted in SWS requiring increased levels of supply, compared to the relatively wet conditions during 2023.

There were three main spikes throughout the year. The above average temperatures in June 2023 created an early summer peak. Then in September, we increased our supplies to SWS to support their River Itchen Abstraction Incentive Mechanism (AIM) scheme for their Lower Itchen sources. The final peak at the start of 2024 was to support SWS during times when they experienced outages at a couple of their Hampshire sources. We supported SWS through a number of operational challenges this year and will continue to do so going forwards.

### 3.3.2.3 Southern Water Bulk Supplies within WRMP24

There is a step change in the way that these bulk supplies are represented within our rdWRMP24. They are assumed within the baseline at the theoretical maximums (as per rWRMP19) until the end of the contract periods. After this, they are included as 'options' which can be selected on a utilisation basis.

The rdWRMP24 does not include the Source J DO improvement scheme or the additional bulk supply to SWS that was conditional on delivery of the scheme, as this scheme has now been removed. This removal does not impact this reporting year SDB as the DO benefit would have been realised in 2024-25 within the rWRMP19.

### 3.3.3 New Appointments and Variations (NAVs)

Portsmouth Water serves two NAVs; IWNL and Leep, which both have several NAV sites and are treated as 'bulk supplies' within the data tables.

The agreements between us and the NAV's do not contain a 'maximum' supply but rather our supplies to NAVs are on a needs basis which would get flagged if the demand they are requesting is not aligned with what we would expect. The data tables therefore provide the outturn values for the NAV bulk supplies which are 0.80 Ml/d for annual average and 1.06 Ml/d for critical period. These are combined with the SWS bulk supplies to provide the overall totals.

## 3.4 Raw Water and Treatment works losses and operational use

The values for 'Raw Water Treatment works losses and operational use' (referred to as 'Losses' for the rest of this report) represent the unaccounted volume between the point of abstraction and the point at which water enters the supply network.

The following section explains how the losses value has been determined and what we are doing to improve our losses representation in the future.

### 3.4.1 Outturn Losses

We calculate our outturn losses by subtracting the bulk supplies, Distribution Input (DI) and augmentation from the raw water abstracted as shown in TableTable 5. The augmentation value is zero for the critical period scenario as the scheme was not required during that time (June 2023).

| 2023-24 Outturn Losses | Annual average Ml/d | Critical Period (Ml/d) |
|---|---|---|
| **Raw water abstracted** | **189.04** | **231.75** |
| Bulk Supplies (SWS & NAVs) | -6.14 | -16.75 |
| Distribution Input | -177.90 | -211.52 |
| Augmentation to the River Ems from Site U | -0.19 | 0 |
| **Treatment works losses and operational use** | **4.82** | **3.48** |

*Table 5: Outturn treatment works losses and operational use (Annual Average calculation)*

Our rWRMP19 and rdWRMP24 both allow 2.4 Ml/d for the losses, which allows for the losses at the treatment works, based on what is required to treat both surface and groundwater before entering supply. In general, complex treatment at surface water works require a high water usage whereas groundwater treatment losses are often negligible.

If we assume treatment works losses of 2.4 Ml/d as per the WRMP allowance, that leaves us with 2.42 Ml/d (annual average) and 1.08 Ml/d (critical period) of water that is unaccounted for between the abstraction point and the point at which it enters supply.

This can be attributed to several factors including:

- **Increased rainfall** leading to fine sediments being washed into our rivers and springs resulting in an increase in turbidity and subsequent increased need for cleaning filters at our treatment works, using more water than usual.
- **Other minor losses at treatment works** such as unbilled authorised consumption (e.g. sampling taps and site facilities).
- **Run to Waste** which is when abstracted water is returned straight back to the environment for various operational reasons

Figure 5 shows how the annual average losses during AMP7 peaked at 10.15 Ml/d in 2022-23. However, we have seen a significant 54% reduction this year. This may be due to less augmentation of the River Ems, and a less impactful reservoir cleaning regime. However, it has not been possible to accurately explore the causes.

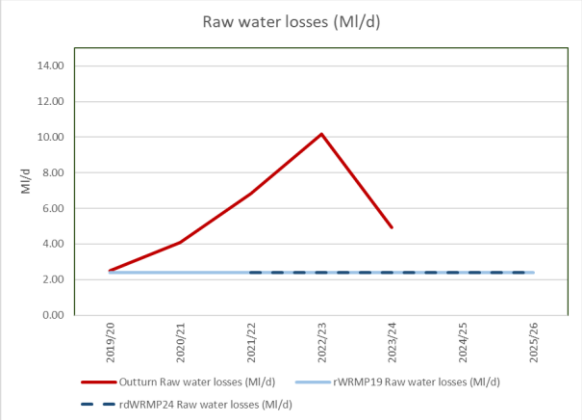



*Figure 5: Outturn raw water losses against rWRMP19 and rdWRMP24 forecasts*

This, and the rising trends over AMP7 have prompted a review of how we assess the losses. We currently have a limited ability to calculate / estimate water losses upstream of service reservoirs using a bottom-up approach due to some incomplete boundary condition monitoring. So, although we have seen a significant reduction in losses this year, we are unable to identify the exact root cause of all the losses.

We have therefore committed to improving the losses calculation in the future by increasing our level of data collection to accurately quantify the losses according to specific categories. This will be undertaken through our System Monitoring Strategy as part of our recalibration of our network models, improving data collection from source to tap. It is anticipated that all major losses will be either measured or inferred (calculated with high confidence) in AMP8. Further information on our System Monitoring Strategy is provided below.

### 3.4.2 System monitoring strategy

As part of this project, we initially reviewed the company-wide needs for specific monitoring around our whole network from the raw water abstracted, through to the customer taps. We have identified that there are multi-departmental dependencies for each potential data source, and a need for centralised water accountancy data.

We are in the gap analysis stage of the project where we are using operational schematics, local knowledge and available measurement data to establish an initial understanding of connectivity and recommended flow monitoring options at our sites. We will be gaining our first insights by the end of June 2024. Flow balance equations are being defined for each site, based on identified flow monitoring regimes and any potential gaps will be investigated more thoroughly during the comprehensive next stage site review.

The outcomes of this study will likely include optioneering in consideration of criticality and investment constraints which should lead to some specific metering and process improvement. The gap analysis will also feed into the full update of the hydraulic model of the network that we are undertaking. We will have 23% of the full update of the hydraulic modelling complete by August 2024, 60% complete by January 2025 and 100% of the network completed by January 2026. This study will provide improved insights into the performance and asset health of our sites, whilst providing more assured measurements for accurately quantifying our losses.

We will continue to provide updates on this project within the Annual Reviews, and in our 6 monthly meetings with the Regulators.

## 3.5 rWRMP19 Supply-Side Options Update

In this section we discuss the progress made in delivering the enhanced DO schemes identified in the rWRMP19 and provide information on how these schemes are represented within rdWRMP24. Table 6

below shows which schemes are included in the rWRMP19 and their benefit in a 1 in 200-year drought scenario.

| Supply Side Scheme | Assumed DO Benefit | | Implementation date |
|---|---|---|---|
| | (Annual Average) Ml/d | (Critical Period) Ml/d | |
| **AMP7 Groundwater schemes total benefit (maximising DO at Sources H, O, C & J)** | 13.3 | 10.5 | 2024–25 |
| **Drought Permit at Source S** | 3.6 | 4.5 | 2020-21 |
| **TUBS/NEUBS** | 16.6 | 21.5 | 2020-21 |
| **Havant Thicket Winter Storage Reservoir** | 21.1 | 21.3 | 2029-30 |

*Table 6 Benefit of rWRMP19 supply-side options*

The Havant Thicket Winter Storage Reservoir and AMP7 groundwater schemes were not forecast to provide DO benefit until 2029-30 and 2024-25 respectively and were therefore not forecast to have any impact on our 2023-24 SDB. However, the Source O scheme has been completed early and therefore provides early benefit within the 2023-24 reporting year. Updates on each AMP7 scheme are provided below.

### 3.5.1 Maximising DO at Sources H, O, C & J

#### 3.5.1.1 Source H

In the 2021 Annual Review, Source H was considered to be a long-term outage (water quality concerns) with a plan to bring the site back online. Improvements have been made to this source and abstraction re-commenced at the start of 2022-23 (i.e. the scheme has been completed).

#### 3.5.1.2 Source J

Whilst the Source J AMP7 scheme was included in the rWRMP19, the subsequent Source J testing indicated that the yield of the boreholes was considerably less than the existing holes and insufficient both in quantity and quality to contribute to a bulk supply. The investigation was concluded in March 2023 and removed as an AMP7 scheme. Source J is therefore included in the rdWRMP24 baseline DO but with no additional benefit from the AMP7 scheme.

#### 3.5.1.3 Source O

When groundwater levels drop below the adit level at Source O, turbidity issues have been experienced. This scheme aimed to mitigate that impact and therefore provide an additional resource in severe to extreme drought. During 2022 concerns were raised due to land-use water quality risks at the site and we began to consider an alternative scheme at Source L which would form part of a wider planned WTW upgrade project.

However, Amazon filters were installed and tested on site at Source O, and then purchased in October 2023, which effectively removed the water quality and turbidity risks. We therefore completed the Source O scheme and will no longer be pursuing potential benefits at Source L until AMP8. The annual average DO benefit of the Source O scheme is 5.2 Ml/d which means that we are able to claim an additional 2.6 Ml/d (half of the total due to the completion half way through the year) for the reporting year 2023-24 compared

to the rWRMP19 forecast. However, this is offset by the long outages (i.e. DO reductions) at the site as already described in Section 3.1.

The full Source O scheme benefit is included in the WRMP24 baseline DO.

#### 3.5.1.4 Source C

Air and turbidity issues are experienced when running the larger borehole pumps at Source C; this scheme was to mitigate that impact and therefore provide greater peak outputs in a drought event.

The scheme was due for completion in March 2024 through the installation of variable speed drives (VSD) for the existing pumps. However, there has been a delay to commissioning due to an insulation test failure of the existing pump and cables, meaning these assets are near end of life and need replacing. Once this is complete, then the VSDs can be commissioned, due to be undertaken at the end of June 2024.

Although the scheme has been delayed, this will not impact the actual security to our customers supply in a drought for the next reporting year (2024-25). This is because during the delay (April-June), we were not at risk of drought following record breaking winter rainfall leading to highly recharged groundwater storage as we head into the spring and summer months.

The Source C scheme benefit is included in the WRMP24 baseline DO.

### 3.5.2 Drought Permit at Source S

Pywr modelling for the rWRMP19 indicates that the Source S permit will provide an additional 3.6 Ml/d and 4.5 Ml/d of water resource zone benefit in the DYAA and DYCP scenarios respectively within a drought equivalent to, or worse than, a 1 in 125-year event. Since publishing of the rWRMP19, Source S has been included as part of a joint WINEP scheme with Southern Water to restore Arundel Park SSSI to 'favourable' condition. Natural England have noted that there is currently insufficient evidence to exclude a hydrogeological link between the SSSI and the chalk groundwater abstractions and therefore to determine whether they are having an impact on the designated features. A pre-AMP8 study commenced in April 2024 but has been put on hold whilst we wait for Natural England to clarify what is required from the investigations regarding the condition assessments.

The drought permit has been included as an option within the rdWRMP24, although the benefit of the option has been refined using a new joint Portsmouth Water and Southern Water Pywr model. The option is utilised between 2025-26 and 2040-41. Post 2040-41 the option is not planned to be used, which aligns with the regulatory expectations that reliance on drought permits reduces overtime.

### 3.5.3 TUBs/NEUBs

Our Drought Plan describes how we use Temporary Use Bans (TUBs) and Non-Essential Use Bans (NEUBs) to lower the demand for water and conserve supplies as a drought develops. Our rWRMP19 includes this benefit as a supply side option in line with our levels of service and regulatory guidance. The identified benefits within our rWRMP19 are shown in Table 6. We have retained these options within the rdWRMP24 although the benefits have been updated to reflect the outputs of the joint Pywr model.

### 3.5.4 Havant Thicket Winter Storage Reservoir

Havant Thicket Reservoir will be the first major new UK reservoir to be built since the 1980s. First and foremost an environmentally-led project, its purpose is to protect some of our country's rarest chalk streams – the River Test and the River Itchen. Southern Water, which supplies our neighbours in West Sussex and Hampshire, are taking steps to protect these rivers by reducing the amount of water they take

from them. This means SWS needs to find new sustainable sources of water to maintain water supplies to their customers in the Hampshire region.

We are in a position to help with this major challenge. This is because of the large number of natural springs in the Havant area which deliver a high quality, sustainable supply of water all year round. In the winter, and during periods of high rainfall, there is a surplus of water from the springs over and above what we need for our own customers and this surplus flows straight out to sea. We can make better use of this excess water by storing it in the Havant Thicket Reservoir and using it to facilitate an additional bulk supply of 21 million litres per day to SWS. This will enable us to share water from our network with Southern Water and make water supplies much more resilient across the whole region.

As part of the scheme, we have committed to delivering an environmental net gain for the area. This includes planting and improving more than 200 hectares of woodland and wood pasture locally. Once complete, the community that surrounds the reservoir will enjoy a new visitor centre, children's play area, wetland, and a network of footpaths, cycle routes and bridleways. We received formal planning consent for the project in 2021 and preparatory work has started on site, including the construction of a new compound, access route, site drainage and trial embankment.

The scheme has a revised delivery date from 2029-30 to 2031-32[8]. This has been represented in the baseline supply for rdWRMP24 and will not therefore have any impact on ours or Southern Waters customers security of supply. The possible contribution of this new asset to regional water resources is something we have reviewed and developed further for rdWRMP24 as it unlocks new local and regional options for future water security, such as water recycling. This is described in detail within the rdWRMP24.

## 3.6 Other potential impacts on supply

In this section we set out how other company programmes may impact our supply in the future, including Drinking Water Inspectorate (DWI) Notices, Water Industry National Environment Programme (WINEP) and resilience schemes.

### 3.6.1 Source L Drought Resilience Scheme

We currently have a WTW upgrade project at Source L WTW and are looking to increase drought resilience at the site as part of the wider work. The scheme would seek to improve the output of the source under lower groundwater level conditions which are currently constrained by operational pump capacity. Pywr modelling has shown that the scheme would provide at least as much DO benefit as the Source O scheme and so was originally proposed as a backup in case of Source O delays. However, now that Source O has been delivered ahead of schedule, we will continue to explore the benefit of improvements at Source L WTW in AMP8.

### 3.6.2 Drinking Water Inspectorate Notices

The company currently have 15 live Drinking Water Inspectorate (DWI) Notices. These Notices have been served on:

- the company's management and training practices,
- NIS cyber assessment framework,
- AMP8 PFAS Strategy,

[8] The delay is the result of an opportunity to future proof the pipeline tunnel in the approved scheme. The pipelines put inside the single tunnel would only initially be used by Portsmouth Water to fill the reservoir with spring water and take water out again. They would not be used for recycled water unless, and until, the Hampshire Water Transfer and Water Recycling Plant (HWTWRP) has received the official go ahead to proceed and has been constructed.

- AMP8 Lead Strategy,
- drinking water safety plans,
- reservoirs and networks (specifically associated with metals); and
- treatment works for parameters including cryptosporidium, metals, nitrate, and risks to disinfection.

A team of specialists have been established to deliver the programme of works developed to meet the requirements of the Notices. This programme includes increasing water quality monitoring, reviewing incoming risks to water quality and the controls available, updating documentation and procedures, and increasing structured training across the business.

Several Notices require planned shutdown of treatment works to undertake remedial works, upgrades, or install new treatment processes. One Notice is linked to the upgrade of a treatment works that has been long-term out of supply since 2017 and on return to service will offer increased resilience in our Hoads Hill Supply System. These planned shutdowns will be programmed to take place outside peak demand periods and will therefore have limited impact on resilience to supply from a WRMP perspective. However, if any parameters are detected above permissible limits at any site across Portsmouth Water's supply system, this could lead to a temporary impact on available deployable output. We will proactively monitor these activities so that we reduce any losses to a minimum whilst ensuring the safety of supply.

### 3.6.3 WINEP Schemes

Portsmouth Water's area of supply includes numerous protected rivers, harbours and coastlines.

We have complied with all previous sustainability reductions and have voluntarily reduced abstraction licences in the past. In this section we set out which activities were included in our WINEP for AMP7 and our progress against our targets. We also provide a summary of our AMP8 WINEP programme for context as we progress towards our WRMP24.

#### 3.6.3.1 AMP7 Schemes

##### 3.6.3.1.1 Scheme 1; Source F WFD No Deterioration

It was initially planned that our Source F WINEP investigation would take place during AMP7 and would focus on preventing deterioration of ecological status from flow pressures in the two waterbodies identified by the EA as being impacted by abstraction at Source F. However, the investigation developed to focus on the Meon catchment, before further developing to a holistic (but preliminary) review of licences across the whole Portsmouth Water supply area. This allowed us to estimate the uncertainty associated with the environmental ambition and emerging licence capping scenarios promoted by the EA. These estimates were used within the WRSE regional planning processes and strongly influenced our dWRMP24.

It was proposed and agreed with the Environment Agency that the AMP7 Source F investigation was closed so that a holistic assessment of abstraction impacts, and best value options, can be undertaken as part of our AMP8 WINEP programme. In the meantime, the augmentation condition added to the Source F licence in 2015 provides low flow mitigation and the on-going Wessex Rivers Trust / Southern Water compensation works on the river Meon (for the River Itchen SAC) will provide greater ecological resilience to the downstream catchment.

Despite this, we committed to report on the levels of abstraction at Sources F and H within our annual reviews to identify how this compares with the recent actual 2010 to 2015 annual average abstraction.

As shown in Figure 6, although we have abstracted above the 'recent actual' (average over 2010-2015) by 3.58 Ml/d in 2023-24, the AMP7 rolling average is still below 11.06 Ml/d.

We are working to improve both the output and the reliability of our sites across the network. As part of this, we took the River Itchen WTW out of service for 7 weeks last autumn. To do this we needed Source F and Source H to be operating at a higher output to maintain supplies to our customers supplied from our Hoads Hill Reservoir. This explains the higher volumes.

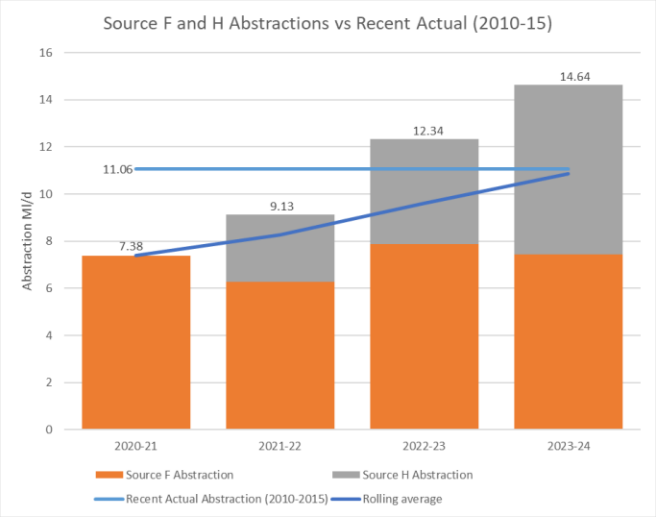



*Figure 6: Outturn abstractions at Source F and H against Recent Actual (2010-2015)*

Next year (2024-25) the Source F output will be lower because we have been undertaking well refurbishment work at the site during Spring 2024.

#### 3.6.3.1.2 Schemes 2 & 3; River Itchen CSMG & River Itchen Salmon Action Plan

Our 2022 Annual Review provides detail on the conclusion of the 'River Itchen CSMG flow target and Salmon Five Point Approach WINEP investigations' from April 2022. The WINEP scheme has now progressed into AMP8 for a joint options appraisal with Southern Water and South East Water.

### 3.6.3.2 AMP8 Schemes

#### 3.6.3.2.1 Sources to investigate

Within our WRMP24 we detail our commitments to assess the effects of our current abstractions and to implement mitigation to protect and enhance the aquatic environment. This will be carried out through our AMP8 WINEP schemes, and other investigations and assessment we have put forwards. These workstreams include:

- Environmental Destination (including Licence capping)
- Drought Permit Options
- Time Limited Licence Variations.

All sources except our lowest risk sources (Sources B and K) will undergo investigation in AMP8, with Sources B and K investigated in AMP9. The progress of these investigations and any potential impacts on supply will be assessed within our future annual reviews once the schemes have commenced.

#### 3.6.3.2.2 Managing risks and delays

Our initial WINEP submission had a phased approach, splitting the investigations equally between AMP8 and AMP9. This phasing raised concerns from regulators about risk and delays to delivering environmental outcomes. A key concern is the QRST group where there is potential risk of abstraction growth due to bulk supply exports to SWS, that consequently increases WFD 'no deterioration' risks. Following regulator feedback and discussions, most of the investigations are in AMP8 (including the QRST group) as described above. However, our approach to managing risk still applies and is provided in full detail in our rdWRMP24 Appendix 5b "Investigating and Achieving Sustainable Abstractions"[9].

[9] https://www.portsmouthwater.co.uk/wp-content/uploads/2023/09/5B-rdWRMP24-Appendix-5B-Investigating-and-Achieving-Sustainable-Abstraction-.pdf

SWS have confirmed that they do not intend to increase the average amount taken in a normal year via bulk supply. However, we are committed to monitoring the QRST abstraction relative to the 'low' environmental destination licence assumptions within our rdWRMP24 that are designed to alleviate WFD 'no deterioration' concerns. The 'low destination – normal year' value of 20.60 Ml/d shown as a straight line in Figure 7 which is representative of 'recent actual' average abstraction over the 2010 to 2015 period.

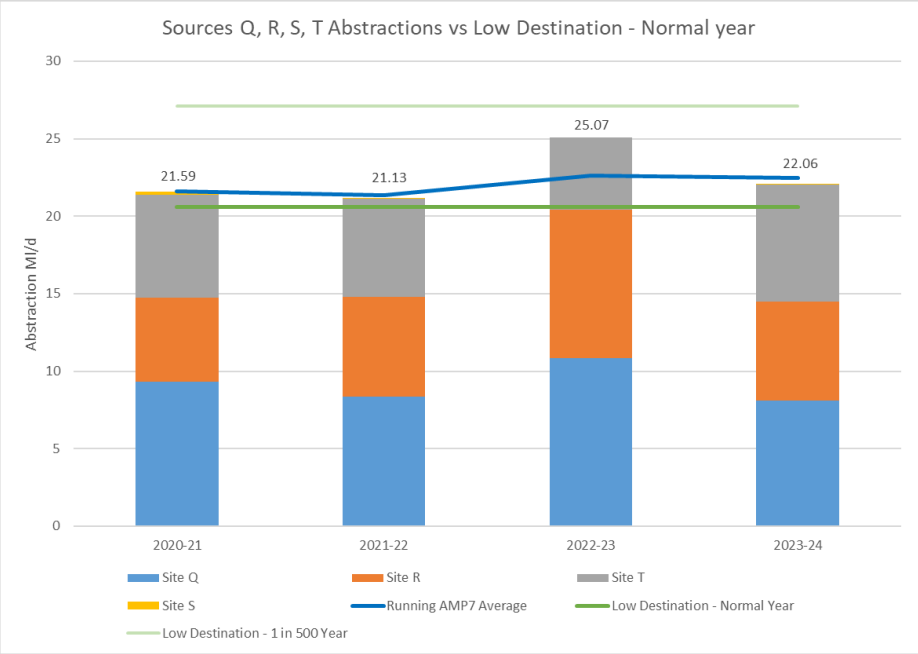



*Figure 7: Sources QRST Abstraction against the low environmental destination for Normal Year and 1 in 500 year*

As shown in Figure 7, in the 2023-24 reporting year we abstracted at a rate that is marginally higher than the 'low destination – normal year' licence assumption, but considerably lower than the 'low destination – 1 in 500 year' assumption of 27.11 Ml/d. The dark blue line represents the rolling average for AMP7 which shows that we are above the 'low destination – normal year' by approximately 1.8 Ml/d. This average was skewed by the increased abstraction during the summer of 2022.

We note that future licence assumptions will be reviewed again for WRMP29 to reflect the outcome of AMP8 WINEP investigations and options appraisals. We are also implementing significant demand reductions over AMP8 and AMP9 which will reduce abstraction and therefore reduce the risk of WFD deterioration.

# 4 DEMAND

## 4.1 Components of demand

Distribution Input (DI) is the amount of water we put into our network each day and is our headline measure of demand. In this section we detail our rWRMP19 forecast against the outturn demand for water in 2023-24. We consider the components of DI as shown in Table 7. We have compared outturn results against the rWRMP19 **dry year** (1 in 20 year) forecasts. This approach is aligned with the EA guidance for the Annual Review, which requires comparison against dry year values.

For most outturn years the 'Macro Components' of demand; unmeasured and measured demand, do not add up precisely to the measured DI. The Annual Review process requires us to reconcile any imbalance using the Maximum Likelihood Estimation (MLE) methodology. All outturn data provided in this review are

the post MLE values and are provided in the data tables in Appendix A using the latest data return guidelines[10].

| Dry Year Demand 2023-24 assumptions (WRMP tables reference) | Annual Average (Ml/d) | | Critical Period (Ml/d) | |
|---|---|---|---|---|
| | rWRMP19 | Outturn | rWRMP19 | Outturn |
| Household & Non-Household Consumption (23-26FP) | 146.96 | 146.79 | 188.15 | 180.41 |
| Total Leakage (40FP) | 24.26 | 28.19 | 24.26 | 28.19 |
| Water taken unbilled (32FP) | 2.5 | 2.41 | 2.5 | 2.41 |
| Distribution system operational use (33FP) | 0.51 | 0.51 | 0.5 | 0.51 |
| **Distribution Input (11FP)** | **174.15** | **177.90 (+2.2%)** | **215.34** | **211.52 (-1.8%)** |

*Table 7: Outturn Distribution Input for 2023-24*

Our outturn DI values are higher than our rWRMP19 values by 3.75 Ml/d (2.2%) in the annual average scenario but lower by 3.82 Ml/d (-1.8%) in the critical period. The component outturn values are all comparable to the forecasts, other than for the consumption in the critical period, and the leakage in both scenarios. We explore each component further below.

## 4.2 Distribution Input

Figure 8 shows the average DI throughout AMP6 (2015-2020), AMP7 to date (2020-2024), and the outturn for 2023-24.

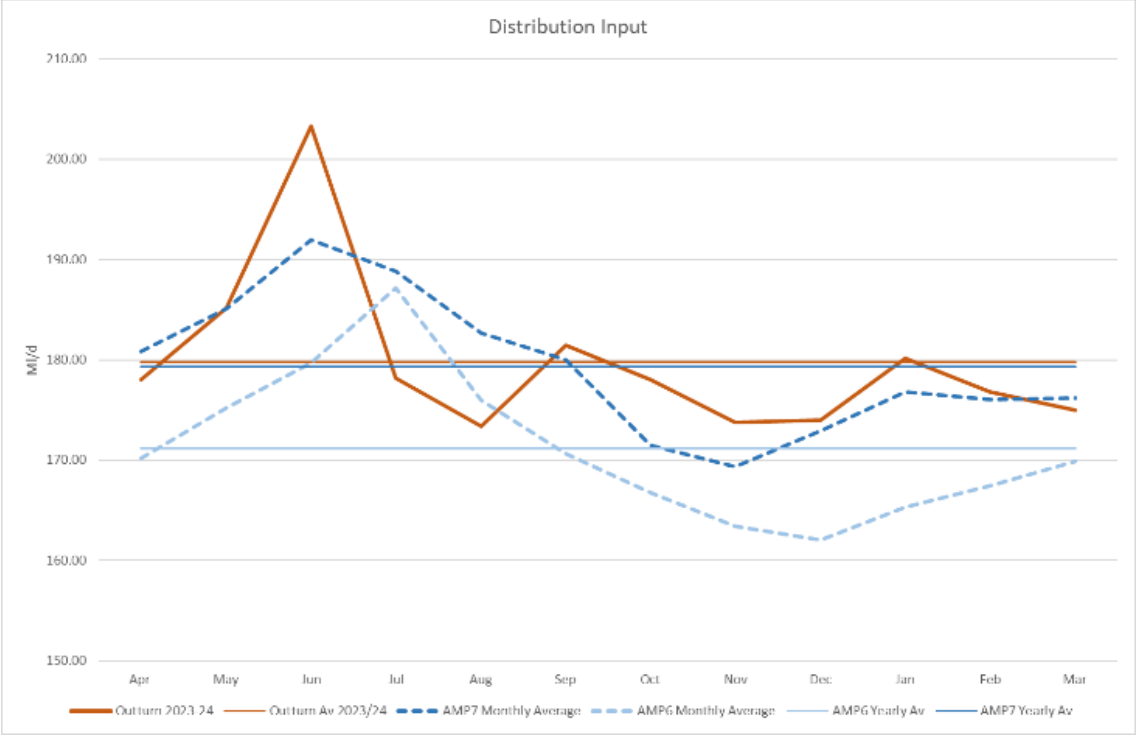



*Figure 8: Monthly Distribution Input (2023-24) against AMP7 monthly average, AMP7 annual average and Outturn 2023-24 monthly average.*

[10] Technical guidance for completion of WRMP19 annual review data template for water companies in England, Environment Agency, March 2024

It is clear that prior to 2020 throughout AMP6, we experienced average levels of DI approximately 8 Ml/d **lower** than we have since seen within AMP7. This is likely due to several factors including the Covid-19 pandemic, unusual weather patterns and the cost-of-living crisis.

Our WRMP DI forecasts for **2023-24** are as follows:

- rWRMP19 – 174.15 Ml/d. This is representative of the average levels of DI we saw throughout AMP6
- WRMP24 – 180.88 Ml/d. This is representative of the average levels we have so far seen throughout AMP7.

The forecasts are produced during the AMP prior to when the WRMP is implemented, so it follows that these forecasts represent the AMPs as shown. Our outturn average value for 2023-24 of 177.90 Ml/d is very close to the current AMP7 average (as shown by the dark blue and dark red lines) and WRMP24 forecast value which provides confidence that we are on track to achieve our DI forecasts as we look towards the implementation of our WRMP24.

The following sections explain our outturn performance for DI.

## 4.3 Household & Non-Household Consumption

In this section we cover our consumption performance and how it compares to our rWRMP19 dry year forecast for 2023-24. Details on household consumption are provided separately to non-household consumption so that we can initially explore our key metric of Per Capita Consumption (PCC). Table 8 shows the consumption split between the two categories.

| Dry Year Demand 2023-24 assumptions (WRMP tables reference) | Annual Average (Ml/d) | | Critical Period (Ml/d) | |
|---|---|---|---|---|
| | rWRMP19 | Outturn | rWRMP19 | Outturn |
| Household Consumption (25:26FP) | 115.02 | 114.17 | 156.21 | 147.79 |
| Non-Household Consumption (23:24FP) | 31.94 | 32.62 | 31.94 | 32.62 |
| **Total consumption** | **146.96** | **146.79** | **188.15** | **180.41** |

*Table 8: Total outturn household and non-household consumption 2023-24*

Outturn annual average household consumption was slightly below forecast, whereas outturn non-household consumption was slightly above, resulting in a comparable total consumption. For the critical period scenario, outturn household, and therefore total consumption, were significantly lower than forecast.

### 4.3.1 Household Consumption

#### 4.3.1.1 Outturn and forecast per capita consumption

Our key measure of household consumption is calculated as per capita consumption (PCC) in litres per head per day (l/h/d). Table 9 below provides a breakdown of how we performed for both measured and unmeasured PCC, with the average household PCC being the primary reporting metric.

| Dry Year Demand 2023-24 assumptions (WRMP tables reference) | Annual Average (Ml/d) | | Critical Period (Ml/d) | |
|---|---|---|---|---|
| | rWRMP19 | Outturn | rWRMP19 | Outturn |
| Measured Household | 138 | 136 | 178 | 168 |
| Unmeasured Household | 161 | 163 | 224 | 216 |
| **Average Household** | **152** | **154** | **206** | **200** |

*Table 9: Outturn household PCC for 2023-24*

Our outturn annual average data for 2023-24 is 154 l/h/d, only 2 l/h/d (1.3%) higher than the rWRMP19 forecast, whereas our critical period PCC was 6 l/h/d lower. Figure 9 shows the significant reductions in average PCC since the start of AMP7 in 2020-21, alongside the rWRMP19 and rdWRMP24 forecasts.

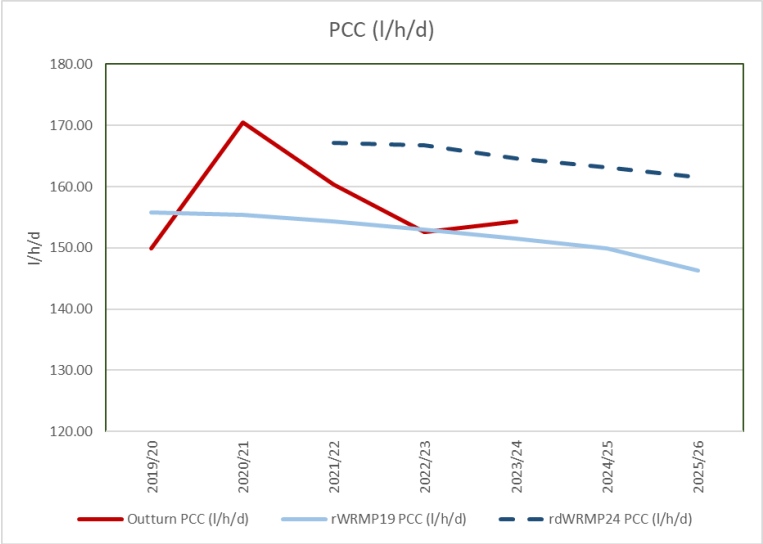



*Figure 9: AMP7 Outturn Average PCC against rWRMP19 and rdWRMP24 forecasts*

Last year we experienced our lowest PCC levels since the start of the AMP. It was not considered a 'normal' year due to the developing drought scenario during the summer 2022 which saw us implement an enhanced communication and water efficiency campaign, as well as the situation receiving wide national press coverage and debate. Although we did not implement TUBs, we believe the drought debate and the implementation of TUBs by Southern Water additionally supressed our customers use of water, over and above the effect of our own campaign.

This year was on the other end of the spectrum and not considered 'dry' due to the high rainfall experienced during 2023 - see Figure 10 which shows that 2023 was the fifth wettest year since 1990. This, combined with on-going higher energy costs and the cost-of-living crisis have kept PCC low. It is challenging to fully understand the root cause of any PCC fluctuations without the implementation of Smart Metering.

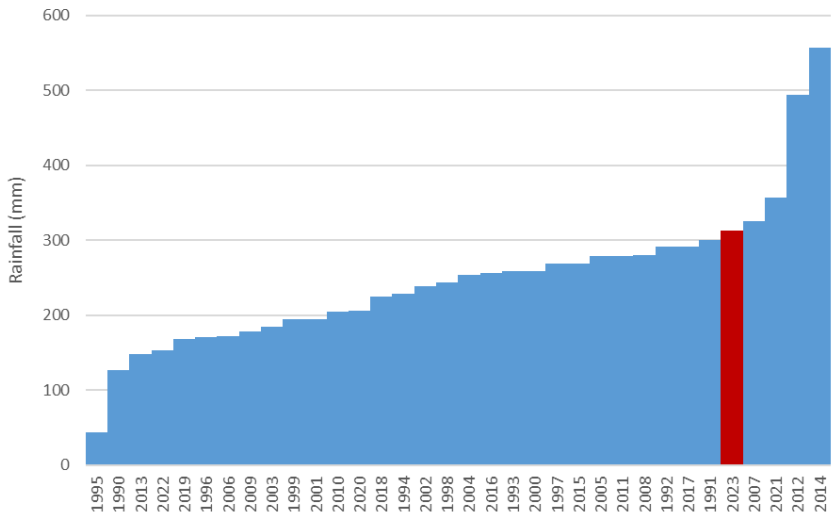



*Figure 10: Ranked total Havant rainfall (April to August inclusive)*

In correspondence, the regulators have expressed concerns as to whether our rdWRMP24 forecasts are still the most appropriate to use, given our recent lower levels of PCC. We responded to those concerns in detail with our Statement of Response (SoR), found on our website[11]. In summary, it is considered that the 2021-22 baseline for the rdWRMP24 represented the 'new normal' following the covid pandemic, and that the last two years have been artificially supressed for the reasons discussed above.

Our water efficiency activities and metering programme target reductions in household consumption and PCC. Further information is provided below.

#### 4.3.1.2 rWRMP19 Household water efficiency and metering programme update

Within our rWRMP19, our demand management options relating to household PCC in AMP7 and beyond are:

- Household water efficiency programme
- Optants (metering)
- Change of occupancy (metering)
- Universal metering (after 2024-25)

Despite the wetter than average summer, we maintained our water efficiency communication campaigns. We also encouraged customers to sign up to our Get Water Fit website to access free water saving gadgets and to undertake personal water efficiency challenges. This year we passed the milestone of 10,000 customers registered on the Get Water Fit website and engaging with the water efficiency messaging. Through all our messaging we continue to encourage our customers to use water wisely.

Despite almost achieving our PCC targets for 2023-24, we have not reached the meter penetration levels that we forecast in our rWRMP19 or rdWRMP24 (see Table 10 for a breakdown). Meter penetration is measured by our 'in-charge' meter installations which include 'Optants' (where customers request a meter), 'Change of Occupier (COO)' and voids.

We have previously identified that the rate of Optant and COO meter installations is significantly lower than forecast in our rWRMP19. A key reason for the shortfall this year, and in 2022-23, is a reduction in COO

[11] PRT-WRMP24-Defra-Letter-Response_final.pdf (portsmouthwater.co.uk) – section 6

opportunities as displayed in Figure 11. There has been a clear decline in house moves compared to 2021-22, driven by both the cost-of-living crisis and less favourable stamp duty policies. In addition to this, we have already converted most customers who are readily willing to convert to a meter (Optants). Until the backing of our WRMP24 proposal of universal smart metering is approved, our challenge is one around converting hearts and minds rather than the emphasis on financial incentives as we already have the lowest water bills in the country.

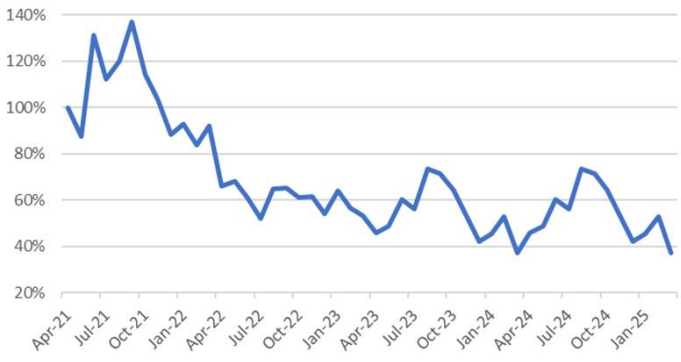



*Figure 11: COO meter opportunities from April 2021 through to our forecast in January 2025*

To mitigate the lower rate of Optant and COO meter installations, and as part of our AMP7 PCC recovery plan, we installed 8,138 not-for-revenue meters during 2022-23 and a further 12,557 this year (2023-24), totalling 20,685 meters. When we are legally able to do so with the acceptance of our WRMP24 and the proposal it contains to introduce a requirement for universal smart metering, these meters will be converted to 'in-charge' meters early in AMP8. This will increase our meter penetration to around 45% (including voids) and closer to the rWRMP19 target of 47%.

We are currently designing the process and customer journey we will follow to convert these meters, supported by the extra functionality we get from our new Customer Relationship Management (CRM) platform, Kraken. This process will also provide the foundation of learning for the roll out of the AMP8 universal Smart Metering programme, beginning in 2025-26. For further information on this, please refer to our SoR on our website[12].

Table 10 below shows how we have performed in 2023-24 compared to the WRMP forecasts. We have fallen short of 506 in charge meters. However, despite the challenging conditions we are targeting the **installation of an additional 506 meters in 2024-25 to ensure that our rdWRMP24 AMP7 target of 38.9% meter penetration is achieved.**

| Meter Installation Category | rWRMP19 Forecast | rdWRMP24 Forecast | Outturn | Variance to rdWRMP24 (No.'s) |
|---|---|---|---|---|
| Optants | 2,500 | 1,494 | 1,408 | -86 |
| COO | 7,000 | 2,302 | 1,843 | -459 |
| Voids | 2,000 | 0 | 39 | +39 |
| Total 'In-charge' | 11,500 | 3,796 | 3,290 | -506 |
| Meter Penetration (incl. voids) | 44% | 37% | 36% | -1% |

*Table 10: Outturn types of Meters installed against rWRMP19 and rdWRMP24 Forecasts.*

### 4.3.2 Non-Household Consumption and water efficiency update

For non-household consumption, the outturn values were only 0.68 Ml/d (2.1%) higher than the rWMRP19 forecasts. In addition to our Household metering and water efficiency activities, this year we have also undertaken water efficiency projects targeting a reduction in commercial use.

[12] PRT-WRMP24-Defra-Letter-Response_final.pdf (portsmouthwater.co.uk) – section 6

Working with the site owners and service partners, a water efficiency audit of the large office complex at Lakeside North Harbour site has resulted in a significant reduction in water usage. Through repairing or replacing taps, toilet cisterns, showerheads in the facility the exercise resulted in a verified saving of 32,061 litres per day. These savings are equivalent to the savings we estimate we would achieve through the installation of 460 household meter installations.

In March 2024 we also completed water efficiency work with the 12 Premier Inns operating in our Region, again looking at taps, toilets and showers. We are still awaiting the verified savings to be reported, but the estimated savings are of a similar volume to the North Harbour exercise (a further c.450 household meter equivalent).

## 4.4 Total Leakage

In this section we cover our leakage performance. Leakage is an element of demand that is mostly in the control of companies, but is also subject to the impact of weather, typically extremes of weather that cause ground movement.

Figure 12 shows how leakage has fluctuated over the reporting year, with the highest peak in June reaching a weekly average of just over 33 Ml/d during the hottest month of the year. This was significantly reduced to around 24 Ml/d by the end of the summer after which we saw a steady rise and a breakout of leakage in the winter resulting in an annual average leakage of 28.19 Ml/d. Whilst this is 3.89 Ml/d higher than our rWRMP19 target for 2023-24, it represents a significant improvement compared with 2022-23 (32.19 Ml/d).

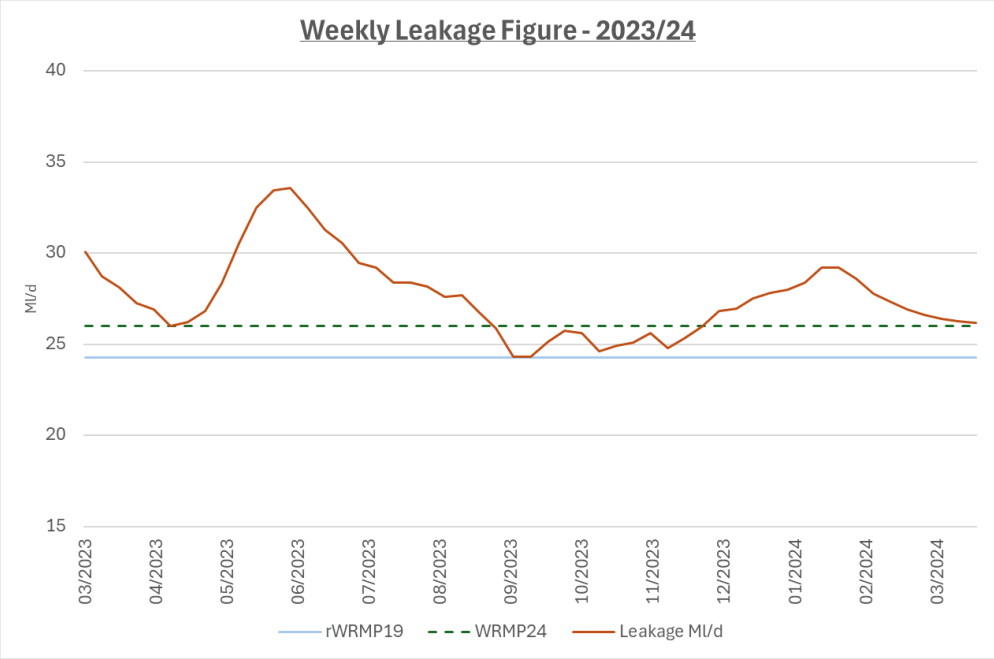



*Figure 12: Weekly average leakage 2023-24 against rWRMP19 and rdWRMP24 targets*

This is the second year of our enhanced leakage recovery plan. We have spent an additional £1.4 million compared to last year on our leakage detection and repair, and due to our significant efforts, we have seen a 4 Ml/d decrease since 2022-23 and leakage is continuing to fall.

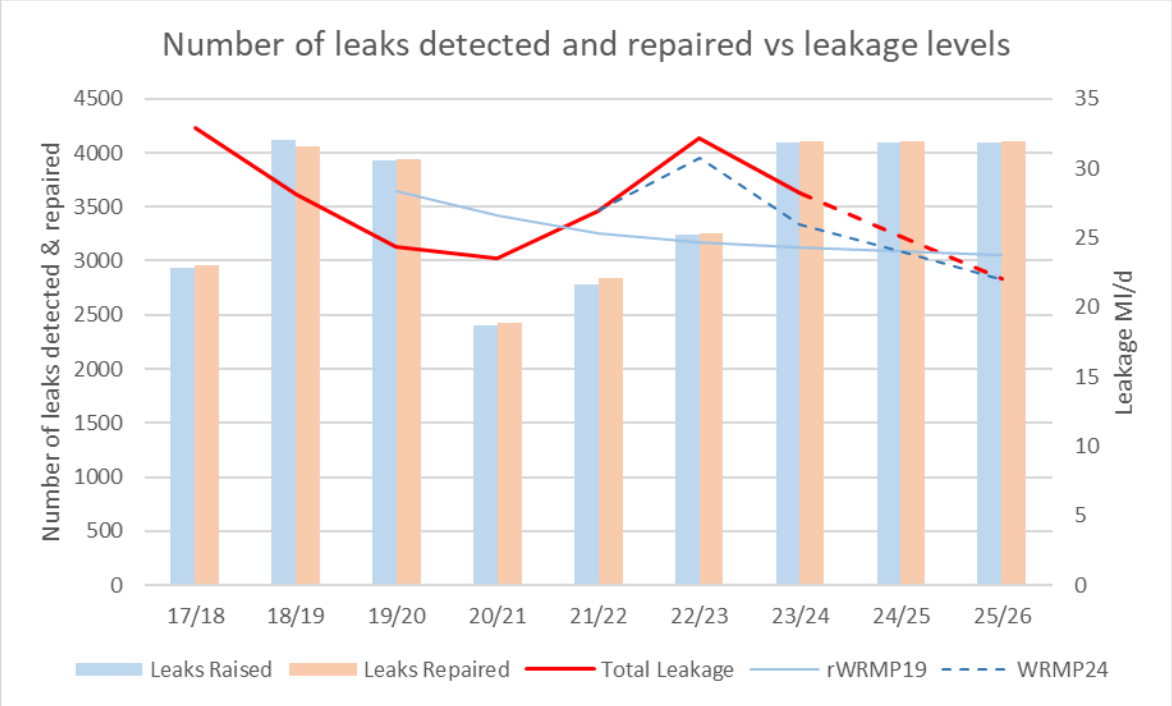
Our additional investment has provided:

- Enhanced leakage detection resource
- Enhanced repair resource

- Enhanced data analytics capability
- New acoustic leak detection equipment
- A full independent review of our monitoring and targeting approach to leakage
- The increased subdivision of our network to enhance leakage detection

Full details of our leakage recovery action plan can be found within our rdWRMP24 Appendix 10C – Leakage Strategy, published on our website[13].

Figure 13 Figure 12: Weekly average leakage 2023-24 against rWRMP19 and rdWRMP24 targetsbelow shows how our annual levels of leakage have correlated with our leakage detection and repair efforts in the past. We were exceeding the rWRMP19 target in 2020-21 but unusual weather conditions in the couple of years that followed (hot dry summers and freeze/thaw conditions in the winter) and our reduced resources




meant that our leakage had significantly increased by 2022-23.

It is clear from the graph that following two years of increased effort in 2018-19 and 2019-20 (increased numbers of leaks detected and repaired), there was a significant reduction in leakage. We are beginning to observe the same trend of reducing leakage in 2023-24 following increased levels of effort, which we will maintain going forwards so that we are prepared for any unusual weather conditions.

We have recently recorded an average April 2024 value of 26.56 Ml/d which shows that we are on the right trajectory. We are predicting that our leakage levels will reduce back to a spot value of 24 Ml/d by March 2025. This will place us in a strong position to meet the first year of WRMP24 and AMP8 annual average target of 22 Ml/d in 2025-26.

*Figure 13: Number of leaks detected and repaired vs outturn leakage*

[13] https://www.portsmouthwater.co.uk/wp-content/uploads/2023/09/10C-rdWRMP24-Appendix-10C-Leakage-Strategy.pdf

### 4.5 Water Taken Unbilled & Distribution System Operational Use

"Water taken unbilled" contains two elements: Legally unbilled water includes water used for firefighting purposes, whilst water illegally unbilled includes use from void properties which are actually occupied.

Distribution System Operational Use (DSOU) refers to water that has entered our network, but which is intentionally run to waste, such as water used for the purpose of mains flushing. It is different to that included in the process losses as it has already entered the network.

These two components combined account for 3 Ml/d in our rWRMP19. Our outturn total value of 2.92 Ml/d is slightly lower than this assumption and so positively contributes to our SDB by 0.08 Ml/d via the DI value.

## 5 HEADROOM ASSESSMENT

The target headroom allowance was revisited for the rWRMP19 using the new WRSE methodology. Further information is available in the Annual Review 2022[14]. The updated allowance was also used within our rdWRMP24. The target headroom values for 2023-24 in the rWRMP19 are as follows:

- Dry year annual average 5.05 Ml/d
- Dry year critical period 5.80 Ml/d

These are the values we have used to calculate our supply demand balance.

## 6 SUPPLY DEMAND BALANCE – 1 IN 200 DRY YEAR SCENARIO

This section describes the overall summary of the 2023-24 supply demand balance situation, considering our performance for the year and comparing this against our rWRMP19 dry year scenario (i.e. 1-in-200 year drought) as per the requirements of the guidance.

### 6.1 Forecast rWRMP19 and outturn supply demand balance – Dry year scenario

Using the outturn values described throughout this report, the final dry year SDB has been calculated for both annual average and critical period scenarios for 2023-24. The outturn SDB balance shown in Table 11 is using the guidance definitions for each of the components (e.g. theoretical maximum bulk supply and inclusive of planned outage) and corresponds to the SDB provided in the data tables in Appendix A.

The SDB is calculated by subtracting the DI and the Headroom from the total WAFU.

| Supply Demand Balance (forecast and outturn as per guidance) | Annual Average (Ml/d) | | Critical Period (Ml/d) | |
|---|---|---|---|---|
| | rWRMP19 | Outturn | rWRMP19 | Outturn |
| Total Water Available for Use | 174.39 | 161.74 | 225.40 | 205.78 |
| Distribution Input | 174.15 | 177.90 | 215.34 | 211.52 |
| Target Headroom | 5.05 | 5.05 | 5.80 | 5.80 |
| Supply Demand Balance | **-4.81** | **-21.21** | **4.26** | **-11.54** |

*Table 11: Outturn Supply demand balance with theoretical maximum bulk supply*

[14] https://www.portsmouthwater.co.uk/wp-content/uploads/2023/01/Portsmouth-Water-WRMP-Annual-Review-June-2022_updated-Dec-2022.pdf

We note that our rWRMP19 shows that we are no longer meeting our target headroom for a 1-in-200 year drought scenario under the annual average condition i.e. our risk and uncertainty allowance for the SDB is fully utilised. It means there is a higher risk we would need to introduce emergency restrictions in a very severe drought. This reflects a reduced benefit from our supply side options and revisions to the baseline demand forecast to reflect outturn values and new WRSE methodologies.

Whilst the **outturn** SDB in Table 11 (-21.21 Ml/d annual average and -11.54 critical period) suggests there would have been be a deficit in a 1-in-200 year drought scenario that is greater than our allowance for uncertainty (headroom), it is not fully representative of a 1-in-200 year drought scenario. This is explored further in the section below.

## 6.2 Forecast rWRMP19 and 'uplifted' outturn supply demand balance – Dry year scenario

It is considered that the outturn SDB calculations in Table 11 are not fully representative of what would happen if we experienced a 1-in-200 year drought scenario in 2023-24. The Environment Agency has introduced new 'optional' guidance for the 2023-24 annual review to develop an 'uplifted' outturn supply demand balance to explore this further, and as such, the following adjustments are made (shown in the data tables in Appendix A):

- Our WRMP assumes a 1-in-20 year demand (dry year). Therefore, we have used the same methodology[15] as that within our rWRMP19 (and rdWRMP24) to uplift the outturn annual average demand to better represent the dry year condition:
    - For the dry year annual average demand condition, an uplift factor of 1.057 has been applied to outturn measured household consumption and an uplift factor of 1.086 has been applied to outturn unmeasured household consumption. This uplifts the outturn value by 8.84 Ml/d (an increase in DI to 186.74 Ml/d), to be more representative of the average annual demand we might have experienced in a drought.
    - For the dry year critical period demand condition, an uplift factor of 1.336 has been applied to outturn measured household consumption and an uplift factor of 1.504 has been applied to outturn unmeasured household consumption. This uplifts the annual average outturn value by 51.91 Ml/d (an increase in DI to 229.81 Ml/d), to be more representative of the summer critical period demand we might have experienced in a drought.
- Outturn planned outage would not have occurred in a 1-in-200 year drought during the critical period, as we would not plan to take sources out of supply when demand for water is at its highest in the summer. To 'uplift' outturn outage to the 1-in-200 year drought scenario we have excluded the outturn planned outage from the critical period in line with our WRMP outage methodology. This has resulted in an outage reduction of 8.13 Ml/d leading to a WAFU increase of the same magnitude. However, we

[15] Note that whilst the same methodology has been followed, we have not used all the available distribution input and leakage data. According to the UKWIR demand forecasting methodologies (used for our WRMP24), to normalise Distribution Input we should remove data for years where demand restrictions were implemented (or make a correction). Whilst we didn't implement any restrictions in 2022-23, SWS did, and we believe our DI was impacted (as described in our SoR on our website). The uplift analysis has therefore removed the 2022-23 data which provides more representative estimations for this year's 'normal' year.

We will be reviewing our approach to demand normalisation and forecasting for the next WRMP29 once an updated Problem Characterisation assessment is complete, including consideration of new evidence on Covid and cost of living impacts.

have not adjusted the outturn annual average outage figure assuming that maintenance works would have been possible at other times of the year.

- Outturn unplanned outage would have been significantly lower in a 1-in-200 year drought because the high groundwater level related outages would not have occurred. These events accounted for around 60% of the outturn unplanned outage as described in Section 3.2, and therefore a 0.4 factor has been applied to the outturn annual average figure, leading to an outage reduction of 2.47 Ml/d and a WAFU increase of the same magnitude. We have not adjusted the outturn critical period unplanned outage figure, as high groundwater level related issues did not occur in the summer and so did not form part of the initial critical period outturn unplanned outage values.

- Outturn deployable output would have been higher in a 1-in-200 year drought because Sources S, D and G would have been fast-tracked back into supply ready for the peak summer demand critical period. Therefore, we have excluded the deployable output reductions for the critical period scenario, leading to an increase in deployable output (and WAFU) of 6.90 Ml/d compared with the reported outturn value. It is also assumed that if these sources were back into supply by June (to meet peak demands), then the sources would be available for the remaining 10 months of the fiscal year. Therefore, we have applied a 0.83 factor to the outturn deployable output reductions for these three sources over the annual average scenario, leading to an increase in deployable output (and WAFU) of 3.83 Ml/d.

Despite the relatively low outturn average PCC of 154 l/h/d (see Table 9), using the uplifted demand data we have calculated that if 2023-24 had been a 'normal' year, we might have seen an average PCC of around 160 l/h/d which is similar to the 'normal' year WRMP24 forecast of around 158 l/h/d. If 2023-24 had been a dry year with no impact from restrictions, we might have seen an average PCC of 166 l/h/d which is similar to the WRMP24 dry year forecast of around 165 l/h/d.

The adjustments to the outturn data are provided in Table 12 in addition to the updated supply demand balances. Despite an uplift in WAFU, the greater uplift in distribution input suggests that in a 1-in-200 year drought event we may experience a deficit of 23.75 Ml/d in the annual average scenario and 14.80 Ml/d in the critical period scenario.

| Supply Demand Balance (outturn and uplifted outturn as per guidance) | Annual Average (Ml/d) | | | Critical Period (Ml/d) | | |
|---|---|---|---|---|---|---|
| | Outturn | Adjustment | 'Uplifted' Outturn | Relevant Outturn | Adjustment | 'Uplifted' Outturn |
| Total Water Available for Use | 161.74 (AA) | + 3.83<br>+ 2.47 | 168.04 | 205.78 (CP) | + 6.90<br>+ 8.13 | 220.81 |
| Distribution Input | 177.90 (AA) | + 8.84 | 186.74 | 177.90 (AA) | + 51.91 | 229.81 |
| Target Headroom | 5.05 (AA) | - | 5.05 | 5.80 (CP) | - | 5.80 |
| Supply Demand Balance | **-21.21** | | **-23.75** | **n/a** | | **-14.80** |

*Table 12: Uplifted Outturn Supply demand balance with theoretical maximum bulk supply*

The calculated deficits suggest that if a 1-in-200 year drought had occurred in 2023-24, it is possible that we would have only been able to maintain one of the two 15 Ml/d bulk supplies to Southern Water during the critical period and that it would be challenging to sustain this supply for long periods during the year. We are working closely with Southern Water to explore the risks associated with a minimal bulk supply to its Sussex North Zone, including via the preparation of our WRMP24s. As formally recognised in our Drought Plan, we would also work closely with Southern Water in an emerging drought situation to manage the bulk supplies and mitigate the risk of supply disruptions to Southern Water and Portsmouth Water customers. We demonstrated this behaviour in the summer of 2022, where we worked very closely with Southern Water across our mutual interest in the River Itchen.

Furthermore, we are committed to working with our joint regulators to address the risks within our existing supply demand balance. This includes 6 monthly meetings to review progress on WRMP schemes. We are expecting the supply demand balance to improve next year (2024-25) owing to:

- Continued efforts to reduce leakage and install household 'in-charge' meters.
- The ability to recognise the full benefit of the Source O deployable output improvement scheme.
- Completion of the Source C deployable output improvement scheme.

In early AMP8 we are planning to convert existing not-for-revenue meters to 'in-charge' meters, and importantly, we will begin rolling out universal smart metering once our WRMP24 has been adopted. This will further improve our supply demand balance during AMP8, leading to improved reliability of our bulk exports to Southern Water in a drought event.

## 6.3 Supply Demand Balance Conclusion

The purpose of this annual review is to understand how we are performing against our rWRMP19, which is based on a dry year scenario (1-in-20 year level of demand and 1-in-200 year level of supply). The conclusion with respect to our performance in 2023-24 is that in the unprecedented scenario that Southern Water had requested the full 30 Ml/d bulk supply everyday throughout the whole year in a 1-in-200 drought event, the SDB would have been in deficit.

We would like to take this opportunity to reassure our customers, regulators and stakeholders that we are doing everything within our capabilities to safeguard the service to our customers and the regional supplies to Southern Water. Although our outturn dry year (1 in 200-year) SDB within Table 11 and Table 12 is negative, it is unlikely that we would face this scenario next year (2024-25) as a 1-in-200 year event would normally develop over multiple dry recharge seasons and groundwater levels are currently unseasonably high following an extended period of wet weather.

Although we find ourselves in a modelled deficit nearing the end of AMP7, we are confident that we will be starting our WRMP24 and AMP8 in a strong position. To summarise what we have achieved:

- We have completed all of our AMP7 supply schemes on schedule to date, one of which has been completed six months ahead of schedule relative to our rWRMP19. The final scheme will be completed in June 2024.
- Our PCC remains lower than previous levels and is lower than forecast in WRMP24, whilst it is recognised that 2023-24 was not a normal year.
- We have installed over 20,000 not-for-revenue meters in AMP7 and are already working on our customers journey in anticipation of the approval of WRMP24, allowing us to begin implementing universal smart metering in 2025-26.
- We have commenced our System Monitoring Strategy work which will improve data collection and quantification of the losses which can then be used to inform and prioritise future investment decisions.
- We have invested a significant amount of money and resources into reducing leakage, and are already seeing the benefits of this, with a downwards trajectory towards AMP8.
- We have formulated an ambitious WINEP programme to commence in AMP8 which will investigate the impact of all but one of our abstractions on our environment. The remaining one will be investigated in AMP9.

The forward look section below provides further details on the work required throughout the remainder of AMP7 and into AMP8.

# 7 FORWARD LOOK

As we look forwards, whilst there is no immediate risk, we are working hard on the mitigation measures outlined in our rWRMP19 to minimise the modelled deficits and to prepare for the implementation of our WRMP24. For example, this report has outlined the substantial progress on installing meters against the end of the AMP7 target and preparations for the smart metering trial in AMP8, as well as our journey to reducing leakage back to target levels.

Now that we have very nearly completed our AMP7 schemes, we have already started to benefit from their implementation. We have also recognised the importance of taking a bottom-up approach to quantify the losses, and will continue to progress this project over the next couple of years.

As part of the development of our rdWRMP24, we have revisited our demand management options (including PCC and leakage) following changes in guidance over time, as well as feedback from the dWRMP24. This has led us to review and refine our 'basket' of options, bringing in industry experts to ensure that we could deliver an ambitious, innovative and value delivering final choice programme of work that would deliver against our 2050 target.

As part of our 'High+' option basket we have made the decision we can reduce leakage by 50% by 2040, 10 years ahead of the national target. We have constructed a programme of work that builds on our success and investments whilst driving forward with new and exciting innovations and improvements. We believe that the next significant step benefit in overall leakage reduction will be in the reduction of customer side leakage, facilitated by our installation of Smart meters. This is included in our overall reported numbers, and we believe that this may make up as much as 50% of the remaining leakage as we move forward into AMP8.

It is therefore hugely important for us that our universal smart metering programme is fully funded for our AMP8/9 submissions as the inroads into this area of relatively untouched leakage will be huge as our installation and follow up customer hyper-care programme roll out.

Our rdWRMP24 was submitted in August 2023 which is our most ambitious and collaborative plan yet. Through this plan, we will become more resilient to increasingly severe drought events, at the same time as reducing our reliance and impact upon the precious chalk-based environment that characterises our supply area. We are acutely aware of the need to mitigate against any risks to our security of supply and will continue to work closely with all relevant stakeholder to ensure that the implementation of our WRMP24 will provide a robust and achievable way forwards as we progress towards AMP8.

# APPENDIX A – Data Tables

**WRMP ANNUAL REVIEW DATA TEMPLATE - WATER BALANCE COMPONENTS**

**Water company:** Portsmouth Water

**Number of resource zones:** 1
**Year of data submission:** 2023/24
**Reporting against WRMP:** Revised WRMP19 (with leakage forecast updated using the Ofwat convergent methodology)
**Scenario:** Outturn Annual Average

| Row numbering in line with WRMP structure | Component | Derivation and type of data | Units | DP | Data requirement | Water company total data | Page or section reference in AR narrative or report |
|---|---|---|---|---|---|---|---|
| | **SUPPLY** | | | | | | |
| | **Resources** | | | | | | |
| $1_{AR}$ | Raw water abstracted | Input outturn data | Ml/d | 2dp | Required | 189.04 | Section 3.4.1 |
| $2.1_{AR}$ | Internal raw water imported (in the reporting year) | Input outturn data (Observed/recorded transfer volumes) | Ml/d | 2dp | Required | 0.00 | n/a |
| $3.1_{AR}$ | Internal potable water imported (in the reporting year) | Input outturn data (Observed/recorded transfer volumes) | Ml/d | 2dp | Required | 0.00 | n/a |
| $5.2_{AR}$ | Internal raw water exported (in the reporting year) | Input outturn data (Observed/recorded transfer volumes) | Ml/d | 2dp | Required | 0.00 | n/a |
| $6.1_{AR}$ | Internal potable water exported (in the reporting year) | Input outturn data (Observed/recorded transfer volumes) | Ml/d | 2dp | Required | 0.00 | n/a |
| $2.2_{AR}$ | External raw water imported (in the reporting year) | Input most challenging contractual volumes | Ml/d | 2dp | Required | 0.00 | n/a |
| $3.2_{AR}$ | External potable water imported (in the reporting year) | Input most challenging contractual volumes | Ml/d | 2dp | Required | 0.00 | n/a |
| $5.3_{AR}$ | External raw water exported (in the reporting year) | Input most challenging contractual volumes | Ml/d | 2dp | Required | 0.00 | n/a |
| $6.2_{AR}$ | External potable water exported (in the reporting year) | Input most challenging contractual volumes | Ml/d | 2dp | If applicable | 30.80 | Section 3.3 |
| $5.1_{AR}$ | Non potable water supplied | Input outturn data | Ml/d | 2dp | Required | 0.00 | n/a |
| $7_{AR}$ | Deployable output (please include and reflect the changes to DO, the sum of 8.1, 8.2 and 8.3, in the WRMP19 tables) | Input dry year figure | Ml/d | 2dp | Required | 206.29 | Section 3.1 |
| $12_{AR}$ | Water Available For Use (own sources) | (Deployable Output + changes to DO) - (Treatment works losses and operational use + outage experienced). | Ml/d | 2dp | Required | 192.54 | n/a |
| $13_{AR}$ | Total Water Available For Use | WAFU own sources + (total water imported) - (total water exported). Total WAFU is based on external transfers reported as the most challenging scenario for contractual volumes as stated in Appendix 1 of the technical annex and internal transfers reported as outturn volumes. | Ml/d | 2dp | Required | 161.74 | Section 3 |
| | **Process Losses** | | | | | | |
| $9_{AR}$ | Raw water losses, treatment works losses and operational use | Input outturn data | Ml/d | 2dp | Required | 4.82 | Section 3.4 |
| $10_{AR}$ | Total outage experienced | Input outturn data | Ml/d | 2dp | Required | 8.93 | Section 3.2 |
| $10.1_{AR}$ | Unplanned outage | Input outturn data (10.1AR and 10.2AR should add together to make 10AR) | Ml/d | 2dp | Optional | 4.12 | Section 3.2 |
| $10.2_{AR}$ | Planned outage | Input outturn data (10.1AR and 10.2AR should add together to make 10AR) | Ml/d | 2dp | Optional | 4.81 | Section 3.2 |
| | **DEMAND** | | | | | | |
| $11_{AR}$ | Distribution input (in reporting year) | Outturn data for:<br>Total household and non-household consumption + water taken unbilled + distribution system operational losses + total leakage | Ml/d | 2dp | Required | 177.90 | Section 4.2 |
| $12.1_{AR}$ | Non potable water demand/consumption | Input outturn data | Ml/d | 2dp | If applicable | | n/a |
| | **Consumption** | | | | | | |
| $23_{AR}$ | Measured non household - consumption | Input outturn data | Ml/d | 2dp | Required | 32.03 | 4.3 |
| $24_{AR}$ | Unmeasured non household - consumption | Input outturn data | Ml/d | 2dp | Required | 0.59 | 4.3 |
| $25_{AR}$ | Measured household - consumption | Input outturn data | Ml/d | 2dp | Required | 33.54 | 4.3 |
| $26_{AR}$ | Unmeasured household - consumption | Input outturn data | Ml/d | 2dp | Required | 80.63 | 4.3 |
| $29_{AR}$ | Measured household - pcc | Outturn data:<br>(Measured household consumption * 1,000,000) / (measured household population * 1,000) | l/h/d | 0dp | Required | 136 | Section 4.3.1 |
| $30_{AR}$ | Unmeasured household - pcc | Outturn data:<br>(Unmeasured household consumption * 1,000,000) / (Unmeasured household population * 1,000) | l/h/d | 0dp | Required | 163 | Section 4.3.1 |
| $31_{AR}$ | Average household - pcc | Outturn data:<br>(Measured and unmeasured household consumption * 1,000,000) / (measured and unmeasured household population * 1,000) | l/h/d | 0dp | Required | 154 | Section 4.3.1 |
| $32_{AR}$ | Water taken unbilled | Input outturn data | Ml/d | 2dp | Required | 2.41 | Section 4.1 |
| $33_{AR}$ | Distribution system operational use | Input outturn data | Ml/d | 2dp | Required | 0.51 | Section 4.1 |
| | **Leakage** | | | | | | |
| $34_{AR}$ | Measured non household - uspl | Input outturn data | Ml/d | 2dp | Required | 0.58 | n/a |
| $35_{AR}$ | Unmeasured non-household - uspl | Input outturn data | Ml/d | 2dp | Required | 0.05 | n/a |
| $36_{AR}$ | Measured household - uspl | Input outturn data | Ml/d | 2dp | Required | 5.42 | n/a |
| $37_{AR}$ | Unmeasured household - uspl | Input outturn data | Ml/d | 2dp | Required | 6.68 | n/a |
| $38_{AR}$ | Void properties - uspl | Input outturn data | Ml/d | 2dp | Required | 0.37 | n/a |
| $39_{AR}$ | Distribution Losses | Input outturn data | Ml/d | 2dp | Required | 15.09 | n/a |
| $40_{AR}$ | Total leakage | Outturn data: Total USPL + distribution losses | Ml/d | 2dp | Required | 28.19 | Section 4.4 |
| | **CUSTOMERS** | | | | | | |
| | **Properties** | | | | | | |
| $42_{AR}$ | Measured non-household - properties | Input end of reporting year data | 000's | 3dp | Required | 11.948 | n/a |
| $43_{AR}$ | Unmeasured non-household - properties | Input end of reporting year data | 000's | 3dp | Required | 1.547 | n/a |
| $44_{AR}$ | Void non households - properties | Input end of reporting year data | 000's | 3dp | Required | 2.204 | n/a |
| $45_{AR}$ | Measured household - properties (excl. voids) | Input end of reporting year data | 000's | 3dp | Required | 111.926 | n/a |
| $45.7_{AR}$ | Measured household void properties | Input end of reporting year data | 000's | 3dp | Required | 2.589 | n/a |
| $46_{AR}$ | Unmeasured household - properties (excl. voids) | Input end of reporting year data | 000's | 3dp | Required | 191.178 | n/a |
| $47_{AR}$ | Unmeasured household void properties | Input end of reporting year data | 000's | 3dp | Required | 4.182 | n/a |
| $48_{AR}$ | Total resource zone properties (inc voids) | End of reporting year data :<br>Total non-household properties + total void non-household properties + total household properties + total void household properties | 000's | 3dp | Required | 325.574 | n/a |
| | **Population** | | | | | | |
| $49_{AR}$ | Measured non-household - population | Input end of reporting year data | 000's | 3dp | Required | 12.820 | n/a |
| $50_{AR}$ | Unmeasured non-household - population | Input end of reporting year data | 000's | 3dp | Required | 1.660 | n/a |
| $51_{AR}$ | Measured household - population | Input end of reporting year data | 000's | 3dp | Required | 245.910 | n/a |
| $52_{AR}$ | Unmeasured household population | Input end of reporting year data | 000's | 3dp | Required | 493.720 | n/a |
| $53_{AR}$ | Total resource zone population | End of reporting year data:<br>Unmeasured and measured household population + Unmeasured and measured non-household population | 000's | 3dp | Required | 754.110 | n/a |
| | **Metering** | | | | | | |
| $57_{AR}$ | Total measured household metering penetration (incl. voids) | Outturn data:<br>Measured household properties exc. voids / (measured household properties exc. voids + unmeasured household properties exc. voids) + measured and unmeasured household void properties) | % | 2dp | Required | 36% | Section 4.3.1.2 |
| $57.1_{AR}$ | Total households with a meter installed | Input outturn data (See technical annex for guidance) | % | 2dp | Optional | | |
| $57.2_{AR}$ | Total numbers of household meters installed | Input outturn data | 000's | 3dp | Required | 16.467 | Section 4.3.1.2 |
| | **SUPPLY-DEMAND BALANCE** | | | | | | |
| $16_{AR}$ | Target headroom | Input adjusted reporting year figure or DYAA WRMP value | Ml/d | 2dp | Required | 5.05 | Section 5 |
| $18_{AR}$ | Observed supply-demand balance (in reporting year) | (Total WAFU - DI) - target headroom | Ml/d | 2dp | Required | -21.21 | Section 6.1 |

**WRMP ANNUAL REVIEW DATA TEMPLATE - WATER BALANCE COMPONENTS**

**Water company:** Portsmouth Water

**Number of resource zones:** 1

**Year of data submission:** 2023/24

**Reporting against WRMP:** WRMP19 (with leakage forecast updated using the Ofwat convergent methodology)

**Scenario:** Outturn Critical Period

| Row numbering in line with WRMP structure | Component | Derivation and type of data | Units | DP | Data requirement | Water company total data | Page or section reference in AR narrative or report |
|---|---|---|---|---|---|---|---|
| | **SUPPLY** | | | | | | |
| | **Resources** | | | | | | |
| $1_{AR}$ | Raw water abstracted | Input outturn data | Ml/d | 2dp | Required | 231.75 | Section 3.4.1 |
| $2.1_{AR}$ | Internal raw water imported (in the reporting year) | Input outturn data (Observed/recorded transfer volumes) | Ml/d | 2dp | Required | 0.00 | n/a |
| $3.1_{AR}$ | Internal potable water imported (in the reporting year) | Input outturn data (Observed/recorded transfer volumes) | Ml/d | 2dp | Required | 0.00 | n/a |
| $5.2_{AR}$ | Internal raw water exported (in the reporting year) | Input outturn data (Observed/recorded transfer volumes) | Ml/d | 2dp | Required | 0.00 | n/a |
| $6.1_{AR}$ | Internal potable water exported (in the reporting year) | Input outturn data (Observed/recorded transfer volumes) | Ml/d | 2dp | Required | 0.00 | n/a |
| $2.2_{AR}$ | External raw water imported (in the reporting year) | Input most challenging contractual volumes | Ml/d | 2dp | Required | 0.00 | n/a |
| $3.2_{AR}$ | External potable water imported (in the reporting year) | Input most challenging contractual volumes | Ml/d | 2dp | Required | 0.00 | n/a |
| $5.3_{AR}$ | External raw water exported (in the reporting year) | Input most challenging contractual volumes | Ml/d | 2dp | Required | 0.00 | n/a |
| $6.2_{AR}$ | External potable water exported (in the reporting year) | Input most challenging contractual volumes | Ml/d | 2dp | If applicable | 31.06 | Section 3.3 |
| $5.1_{AR}$ | Non potable water supplied | Input outturn data | Ml/d | 2dp | Required | 0.00 | n/a |
| $7_{AR}$ | Deployable output (please include and reflect the changes to DO, the sum of 8.1, 8.2 and 8.3, in the WRMP19 tables) | Input dry year figure | Ml/d | 2dp | Required | 253.44 | Section 3.1 |
| $12_{AR}$ | Water Available For Use (own sources) | (Deployable Output + changes to DO) - (Treatment works losses and operational use + outage experienced). | Ml/d | 2dp | Required | 236.84 | n/a |
| $13_{AR}$ | Total Water Available For Use | WAFU own sources + (total water imported) - (total water exported). Total WAFU is based on external transfers reported as the most challenging scenario for contractual volumes as stated in Appendix 1 of the technical annex and internal transfers reported as outturn volumes. | Ml/d | 2dp | Required | 205.78 | Section 3 |
| | **Process Losses** | | | | | | |
| $9_{AR}$ | Raw water losses, treatment works losses and operational use | Input outturn data | Ml/d | 2dp | Required | 3.48 | Section 3.4 |
| $10_{AR}$ | Total outage experienced | Input outturn data | Ml/d | 2dp | Required | 13.12 | Section 3.2 |
| $10.1_{AR}$ | Unplanned outage | Input outturn data (10.1AR and 10.2AR should add together to make 10AR) | Ml/d | 2dp | Optional | 4.99 | Section 3.2 |
| $10.2_{AR}$ | Planned outage | Input outturn data (10.1AR and 10.2AR should add together to make 10AR) | Ml/d | 2dp | Optional | 8.13 | Section 3.2 |
| | **DEMAND** | | | | | | |
| $11_{AR}$ | Distribution input (in reporting year) | Outturn data for:<br>Total household and non-household consumption + water taken unbilled + distribution system operational losses + total leakage | Ml/d | 2dp | Required | 211.52 | Section 4.2 |
| $12.1_{AR}$ | Non potable water demand/consumption | Input outturn data | Ml/d | 2dp | If applicable | | n/a |
| | **Consumption** | | | | | | |
| $23_{AR}$ | Measured non household - consumption | Input outturn data | Ml/d | 2dp | Required | 32.03 | 4.3 |
| $24_{AR}$ | Unmeasured non household - consumption | Input outturn data | Ml/d | 2dp | Required | 0.59 | 4.3 |
| $25_{AR}$ | Measured household - consumption | Input outturn data | Ml/d | 2dp | Required | 41.35 | 4.3 |
| $26_{AR}$ | Unmeasured household - consumption | Input outturn data | Ml/d | 2dp | Required | 106.45 | 4.3 |
| $29_{AR}$ | Measured household - pcc | Outturn data:<br>(Measured household consumption * 1,000,000) / (measured household population * 1,000) | l/h/d | 0dp | Required | 168 | Section 4.3.1 |
| $30_{AR}$ | Unmeasured household - pcc | Outturn data:<br>(Unmeasured household consumption * 1,000,000) / (Unmeasured household population * 1,000) | l/h/d | 0dp | Required | 216 | Section 4.3.1 |
| $31_{AR}$ | Average household - pcc | Outturn data:<br>(Measured and unmeasured household consumption * 1,000,000) / (measured and unmeasured household population * 1,000) | l/h/d | 0dp | Required | 200 | Section 4.3.1 |
| $32_{AR}$ | Water taken unbilled | Input outturn data | Ml/d | 2dp | Required | 2.41 | Section 4.1 |
| $33_{AR}$ | Distribution system operational use | Input outturn data | Ml/d | 2dp | Required | 0.51 | Section 4.1 |
| | **Leakage** | | | | | | |
| $34_{AR}$ | Measured non household - uspl | Input outturn data | Ml/d | 2dp | Required | 0.58 | n/a |
| $35_{AR}$ | Unmeasured non-household - uspl | Input outturn data | Ml/d | 2dp | Required | 0.05 | n/a |
| $36_{AR}$ | Measured household - uspl | Input outturn data | Ml/d | 2dp | Required | 5.42 | n/a |
| $37_{AR}$ | Unmeasured household - uspl | Input outturn data | Ml/d | 2dp | Required | 6.68 | n/a |
| $38_{AR}$ | Void properties - uspl | Input outturn data | Ml/d | 2dp | Required | 0.37 | n/a |
| $39_{AR}$ | Distribution Losses | Input outturn data | Ml/d | 2dp | Required | 15.09 | n/a |
| $40_{AR}$ | Total leakage | Outturn data: Total USPL + distribution losses | Ml/d | 2dp | Required | 28.19 | Section 4.4 |
| | **CUSTOMERS** | | | | | | |
| | **Properties** | | | | | | |
| $42_{AR}$ | Measured non-household - properties | Input end of reporting year data | 000's | 3dp | Required | 11.948 | n/a |
| $43_{AR}$ | Unmeasured non-household - properties | Input end of reporting year data | 000's | 3dp | Required | 1.547 | n/a |
| $44_{AR}$ | Void non households - properties | Input end of reporting year data | 000's | 3dp | Required | 2.204 | n/a |
| $45_{AR}$ | Measured household - properties (excl. voids) | Input end of reporting year data | 000's | 3dp | Required | 111.926 | n/a |
| $45.7_{AR}$ | Measured household void properties | Input end of reporting year data | 000's | 3dp | Required | 2.589 | n/a |
| $46_{AR}$ | Unmeasured household - properties (excl. voids) | Input end of reporting year data | 000's | 3dp | Required | 191.178 | n/a |
| $47_{AR}$ | Unmeasured household void properties | Input end of reporting year data | 000's | 3dp | Required | 4.182 | n/a |
| $48_{AR}$ | Total resource zone properties (inc voids) | End of reporting year data :<br>Total non-household properties + total void non-household properties + total household properties + total void household properties | 000's | 3dp | Required | 325.574 | n/a |
| | **Population** | | | | | | |
| $49_{AR}$ | Measured non-household - population | Input end of reporting year data | 000's | 3dp | Required | 12.820 | n/a |
| $50_{AR}$ | Unmeasured non-household - population | Input end of reporting year data | 000's | 3dp | Required | 1.660 | n/a |
| $51_{AR}$ | Measured household - population | Input end of reporting year data | 000's | 3dp | Required | 245.910 | n/a |
| $52_{AR}$ | Unmeasured household population | Input end of reporting year data | 000's | 3dp | Required | 493.720 | n/a |
| $53_{AR}$ | Total resource zone population | End of reporting year data:<br>Unmeasured and measured household population + Unmeasured and measured non-household population | 000's | 3dp | Required | 754.110 | n/a |
| | **Metering** | | | | | | |
| $57_{AR}$ | Total measured household metering penetration (incl. voids) | Outturn data:<br>Measured household properties exc. voids / (measured household properties exc. voids + unmeasured household properties exc. voids) + measured and unmeasured household void properties) | % | 2dp | Required | 36% | Section 4.3.1.2 |
| $57.1_{AR}$ | Total households with a meter installed | Input outturn data (See technical annex for guidance) | % | 2dp | Optional | | |
| $57.2_{AR}$ | Total numbers of household meters installed | Input outturn data | 000's | 3dp | Required | 16.467 | Section 4.3.1.2 |
| | **SUPPLY-DEMAND BALANCE** | | | | | | |
| $16_{AR}$ | Target headroom | Input adjusted reporting year figure or DYAA WRMP value | Ml/d | 2dp | Required | 5.80 | Section 5 |
| $18_{AR}$ | Observed supply-demand balance (in reporting year) | (Total WAFU - DI) - target headroom | Ml/d | 2dp | Required | -11.54 | Section 6.1 |

**WRMP ANNUAL REVIEW DATA TEMPLATE - WATER BALANCE COMPONENTS**

**Water company:** Portsmouth Water
**Number of resource zones:** 1
**Year of data submission:** 2023/24
**Reporting against WRMP:** WRMP19 (with leakage forecast updated using the Ofwat convergent methodology)
**Scenario:** Dry year uplifted/adjusted Annual Average

| Row numbering in line with WRMP structure | Component | Derivation and type of data | Units | DP | Data requirement | Water company total data | Page or section reference in AR narrative or report | Notes on data provided |
|---|---|---|---|---|---|---|---|---|
| | **SUPPLY** | | | | | | | |
| | **Resources** | | | | | | | |
| $1_{AR}$ | Raw water abstracted | Input outturn data | Ml/d | 2dp | | | | |
| $2.1_{AR}$ | Internal raw water imported (in the reporting year) | Input outturn data (Observed/recorded transfer volumes) | Ml/d | 2dp | | | | |
| $3.1_{AR}$ | Internal potable water imported (in the reporting year) | Input outturn data (Observed/recorded transfer volumes) | Ml/d | 2dp | | | | |
| $5.2_{AR}$ | Internal raw water exported (in the reporting year) | Input outturn data (Observed/recorded transfer volumes) | Ml/d | 2dp | | | | |
| $6.1_{AR}$ | Internal potable water exported (in the reporting year) | Input outturn data (Observed/recorded transfer volumes) | Ml/d | 2dp | | | | |
| $2.2_{AR}$ | External raw water imported (in the reporting year) | Input most challenging contractual volumes | Ml/d | 2dp | | | | |
| $3.2_{AR}$ | External potable water imported (in the reporting year) | Input most challenging contractual volumes | Ml/d | 2dp | | | | |
| $5.3_{AR}$ | External raw water exported (in the reporting year) | Input most challenging contractual volumes | Ml/d | 2dp | | | | |
| $6.2_{AR}$ | External potable water exported (in the reporting year) | Input most challenging contractual volumes | Ml/d | 2dp | | 30.80 | | |
| $5.1_{AR}$ | Non potable water supplied | Input outturn data | Ml/d | 2dp | | | | |
| $7_{AR}$ | Deployable output (please include and reflect the changes to DO, the sum of 8.1, 8.2 and 8.3, in the WRMP19 tables) | Input dry year figure | Ml/d | 2dp | Required | 210.12 | Section 6.2 | AA outturn value uplifted by 3.83 Ml/d to account for the sources fast tracked back into supply during a 1 in 200 year drought event. |
| $12_{AR}$ | Water Available For Use (own sources) | (Deployable Output + changes to DO) - (Treatment works losses and operational use + outage experienced). | Ml/d | 2dp | Required | 198.85 | Section 6.2 | Calc |
| $13_{AR}$ | Total Water Available For Use | WAFU own sources + (total water imported) - (total water exported). Total WAFU is based on external transfers reported as maximum contractual volumes as stated in WRMP19 and internal transfers reported as outturn volumes. | Ml/d | 2dp | Required | 168.04 | Section 6.2 | Calc |
| | **Process Losses** | | | | | | | |
| $9_{AR}$ | Raw water losses, treatment works losses and operational use | Input outturn data | Ml/d | 2dp | Required | 4.82 | Section 6.2 | No uplift applied. AR outturn data template assumed to be representative of a 1 in 200 year Dry Year scenario. |
| $10_{AR}$ | Total outage experienced | Input outturn data | Ml/d | 2dp | Required | 6.46 | Section 6.2 | Total of planned and 'uplifted' unplanned outage |
| $10.1_{AR}$ | Unplanned outage | Input outturn data (10.1AR and 10.2AR should add together to make 10AR) | Ml/d | 2dp | | 1.65 | | 60% of the outturn AA value has been removed as these events were due to high gw (ie not occuring in a drought) |
| $10.2_{AR}$ | Planned outage | Input outturn data (10.1AR and 10.2AR should add together to make 10AR) | Ml/d | 2dp | | 4.81 | | No uplift applied. AR outturn data template assumed to be representative of a 1 in 200 year Dry Year scenario. |
| | **DEMAND** | | | | | | | |
| $11_{AR}$ | Distribution input (in reporting year) | Outturn data for:<br>Total household and non-household consumption + water taken unbilled + distribution system operational losses + total leakage | Ml/d | 2dp | Required | 186.74 | Section 6.2 | Calc |
| $12.1_{AR}$ | Non potable water demand/consumption | Input outturn data | Ml/d | 2dp | | | | |
| | **Consumption** | | | | | | | |
| $23_{AR}$ | Measured non household - consumption | Input outturn data | Ml/d | 2dp | Required | 32.03 | Section 6.2 | No uplift applied as per the Revised WRMP19 and WRMP24 methodology. |
| $24_{AR}$ | Unmeasured non household - consumption | Input outturn data | Ml/d | 2dp | Required | 0.59 | Section 6.2 | No uplift applied as per the Revised WRMP19 and WRMP24 methodology. |
| $25_{AR}$ | Measured household - consumption | Input outturn data | Ml/d | 2dp | Required | 35.46 | Section 6.2 | Uplifted by factor of 1.057 following the Revised WRMP19 and WRMP24 uplift methodology. Uplifted to 1 in 20 year DYAA scenario. |
| $26_{AR}$ | Unmeasured household - consumption | Input outturn data | Ml/d | 2dp | Required | 87.56 | Section 6.2 | Uplifted by factor of 1.086 following the Revised WRMP19 and WRMP24 uplift methodology. Uplifted to 1 in 20 year DYAA scenario. |
| $29_{AR}$ | Measured household - pcc | Outturn data:<br>(Measured household consumption * 1,000,000) / (measured household population * 1,000) | l/h/d | 0dp | Required | 144 | Section 6.2 | Calc |
| $30_{AR}$ | Unmeasured household - pcc | Outturn data:<br>(Unmeasured household consumption * 1,000,000) / (Unmeasured household population * 1,000) | l/h/d | 0dp | Required | 177 | Section 6.2 | Calc |
| $31_{AR}$ | Average household - pcc | Outturn data:<br>(Measured and unmeasured household consumption * 1,000,000) / (measured and unmeasured household population * 1,000) | l/h/d | 0dp | Required | 166 | Section 6.2 | Calc |
| $32_{AR}$ | Water taken unbilled | Input outturn data | Ml/d | 2dp | Required | 2.41 | Section 6.2 | No uplift applied as per the Revised WRMP19 and WRMP24 methodology. |
| $33_{AR}$ | Distribution system operational use | Input outturn data | Ml/d | 2dp | Required | 0.51 | Section 6.2 | No uplift applied as per the Revised WRMP19 and WRMP24 methodology. |
| | **Leakage** | | | | | | | |
| $34_{AR}$ | Measured non household - uspl | Input outturn data | Ml/d | 2dp | | | | |
| $35_{AR}$ | Unmeasured non-household - uspl | Input outturn data | Ml/d | 2dp | | | | |
| $36_{AR}$ | Measured household - uspl | Input outturn data | Ml/d | 2dp | | | | |
| $37_{AR}$ | Unmeasured household - uspl | Input outturn data | Ml/d | 2dp | | | | |
| $38_{AR}$ | Void properties - uspl | Input outturn data | Ml/d | 2dp | | | | |
| $39_{AR}$ | Distribution Losses | Input outturn data | Ml/d | 2dp | Required | 15.09 | Section 6.2 | No uplift applied as per the Revised WRMP19 and WRMP24 methodology. |
| $40_{AR}$ | Total leakage | Outturn data: Total USPL + distribution losses | Ml/d | 2dp | Required | 28.19 | Section 6.2 | No uplift applied as per the Revised WRMP19 and WRMP24 methodology. |
| | **CUSTOMERS** | | | | | | | |
| | **Properties** | | | | | | | |
| $42_{AR}$ | Measured non-household - properties | Input end of reporting year data | 000's | 3dp | | | | |
| $43_{AR}$ | Unmeasured non-household - properties | Input end of reporting year data | 000's | 3dp | | | | |
| $44_{AR}$ | Void non households - properties | Input end of reporting year data | 000's | 3dp | | | | |
| $45_{AR}$ | Measured household - properties (excl. voids) | Input end of reporting year data | 000's | 3dp | | | | |
| $45.7_{AR}$ | Measured household void properties | Input end of reporting year data | 000's | 3dp | | | | |
| $46_{AR}$ | Unmeasured household - properties (excl. voids) | Input end of reporting year data | 000's | 3dp | | | | |
| $47_{AR}$ | Unmeasured household void properties | Input end of reporting year data | 000's | 3dp | | | | |
| $48_{AR}$ | Total resource zone properties (inc voids) | End of reporting year data :<br>Total non-household properties + total void non-household properties + total household properties + total void household properties | 000's | 3dp | | | | |
| | **Population** | | | | | | | |
| $49_{AR}$ | Measured non-household - population | Input end of reporting year data | 000's | 3dp | | 12.82 | | |
| $50_{AR}$ | Unmeasured non-household - population | Input end of reporting year data | 000's | 3dp | | 1.66 | | |
| $51_{AR}$ | Measured household - population | Input end of reporting year data | 000's | 3dp | | 245.91 | | |
| $52_{AR}$ | Unmeasured household population | Input end of reporting year data | 000's | 3dp | | 493.72 | | |
| $53_{AR}$ | Total resource zone population | End of reporting year data:<br>Unmeasured and measured household population + Unmeasured and measured non-household population | 000's | 3dp | | 754.11 | | |
| | **Metering** | | | | | | | |
| $57_{AR}$ | Total measured household metering penetration (incl. voids) | Outturn data:<br>Measured household properties exc. voids / (measured household properties exc. voids + unmeasured household properties exc. voids) + measured and unmeasured household void properties) | % | 2dp | | | | |
| $57.1_{AR}$ | Total households with a meter installed | Input outturn data (See technical annex for guidance) | % | 2dp | | | | |
| $57.2_{AR}$ | Total numbers of household meters installed | Input outturn data | 000's | 3dp | | | | |
| | **SUPPLY-DEMAND BALANCE** | | | | | | | |
| $16_{AR}$ | Target headroom | Input adjusted reporting year figure or DYAA WRMP value | Ml/d | 2dp | Required | 5.05 | Section 6.2 | |
| $18_{AR}$ | Supply-demand balance (in reporting year) | (Total WAFU - DI) - target headroom | Ml/d | 2dp | Required | -23.75 | Section 6.2 | |

**WRMP ANNUAL REVIEW DATA TEMPLATE - WATER BALANCE COMPONENTS**

| | |
|---|---|
| **Water company:** | Portsmouth Water |
| **Number of resource zones:** | 1 |
| **Year of data submission:** | 2023/24 |
| **Reporting against WRMP:** | WRMP19 (with leakage forecast updated using the Ofwat convergent methodology) |
| **Scenario:** | Dry year uplifted/adjusted Critical Period |

| Row numbering in line with WRMP structure | Component | Derivation and type of data | Units | DP | Data requirement | Water company total data | Page or section reference in AR narrative or report | Notes on data provided |
|---|---|---|---|---|---|---|---|---|
| | **SUPPLY** | | | | | | | |
| | **Resources** | | | | | | | |
| $1_{AR}$ | Raw water abstracted | Input outturn data | Ml/d | 2dp | | | | |
| $2.1_{AR}$ | Internal raw water imported (in the reporting year) | Input outturn data (Observed/recorded transfer volumes) | Ml/d | 2dp | | | | |
| $3.1_{AR}$ | Internal potable water imported (in the reporting year) | Input outturn data (Observed/recorded transfer volumes) | Ml/d | 2dp | | | | |
| $5.2_{AR}$ | Internal raw water exported (in the reporting year) | Input outturn data (Observed/recorded transfer volumes) | Ml/d | 2dp | | | | |
| $6.1_{AR}$ | Internal potable water exported (in the reporting year) | Input outturn data (Observed/recorded transfer volumes) | Ml/d | 2dp | | | | |
| $2.2_{AR}$ | External raw water imported (in the reporting year) | Input most challenging contractual volumes | Ml/d | 2dp | | | | |
| $3.2_{AR}$ | External potable water imported (in the reporting year) | Input most challenging contractual volumes | Ml/d | 2dp | | | | |
| $5.3_{AR}$ | External raw water exported (in the reporting year) | Input most challenging contractual volumes | Ml/d | 2dp | | | | |
| $6.2_{AR}$ | External potable water exported (in the reporting year) | Input most challenging contractual volumes | Ml/d | 2dp | | 31.06 | | |
| $5.1_{AR}$ | Non potable water supplied | Input outturn data | Ml/d | 2dp | | | | |
| $7_{AR}$ | Deployable output (please include and reflect the changes to DO, the sum of 8.1, 8.2 and 8.3, in the WRMP19 tables) | Input dry year figure | Ml/d | 2dp | Required | 260.34 | Section 6.2 | CP outturn value uplifted by 6.90 Ml/d to account for the sources fast tracked back into supply during a 1 in 200 year drought event. |
| $12_{AR}$ | Water Available For Use (own sources) | (Deployable Output + changes to DO) - (Treatment works losses and operational use + outage experienced). | Ml/d | 2dp | Required | 251.86 | Section 6.2 | Calc |
| $13_{AR}$ | Total Water Available For Use | WAFU own sources + (total water imported) - (total water exported). Total WAFU is based on external transfers reported as maximum contractual volumes as stated in WRMP19 and internal transfers reported as outturn volumes. | Ml/d | 2dp | Required | 220.81 | Section 6.2 | Calc |
| | **Process Losses** | | | | | | | |
| $9_{AR}$ | Raw water losses, treatment works losses and operational use | Input outturn data | Ml/d | 2dp | Required | 3.48 | Section 6.2 | No uplift applied. CP AR outturn data template assumed to be representative of a 1 in 200 year Dry Year scenario. |
| $10_{AR}$ | Total outage experienced | Input outturn data | Ml/d | 2dp | Required | 4.99 | Section 6.2 | No uplift applied. AR outturn data template assumed to be representative of a 1 in 200 year Dry Year scenario. |
| $10.1_{AR}$ | Unplanned outage | Input outturn data (10.1AR and 10.2AR should add together to make 10AR) | Ml/d | 2dp | | 4.99 | | No uplift applied. AR outturn data template assumed to be representative of a 1 in 200 year Dry Year scenario. |
| $10.2_{AR}$ | Planned outage | Input outturn data (10.1AR and 10.2AR should add together to make 10AR) | Ml/d | 2dp | | 0 | | Planned outage excluded in line with our WRMP outage methodology |
| | **DEMAND** | | | | | | | |
| $11_{AR}$ | Distribution input (in reporting year) | Outturn data for:<br>Total household and non-household consumption + water taken unbilled + distribution system operational losses + total leakage | Ml/d | 2dp | Required | 229.81 | Section 6.2 | Calc |
| $12.1_{AR}$ | Non potable water demand/consumption | Input outturn data | Ml/d | 2dp | | | | |
| | **Consumption** | | | | | | | |
| $23_{AR}$ | Measured non household - consumption | Input outturn data | Ml/d | 2dp | Required | 32.03 | Section 6.2 | No uplift applied as per the Revised WRMP19 and WRMP24 methodology. |
| $24_{AR}$ | Unmeasured non household - consumption | Input outturn data | Ml/d | 2dp | Required | 0.59 | Section 6.2 | No uplift applied as per the Revised WRMP19 and WRMP24 methodology. |
| $25_{AR}$ | Measured household - consumption | Input outturn data | Ml/d | 2dp | Required | 44.81 | Section 6.2 | AA Uplifted by factor of 1.336 following the Revised WRMP19 and WRMP24 uplift methodology. Uplifted to 1 in 20 year DYAA scenario. |
| $26_{AR}$ | Unmeasured household - consumption | Input outturn data | Ml/d | 2dp | Required | 121.27 | Section 6.2 | AA Uplifted by factor of 1.504 following the Revised WRMP19 and WRMP24 uplift methodology. Uplifted to 1 in 20 year DYAA scenario. |
| $29_{AR}$ | Measured household - pcc | Outturn data:<br>(Measured household consumption * 1,000,000) / (measured household population * 1,000) | l/h/d | 0dp | Required | 182 | Section 6.2 | Calc |
| $30_{AR}$ | Unmeasured household - pcc | Outturn data:<br>(Unmeasured household consumption * 1,000,000) / (Unmeasured household population * 1,000) | l/h/d | 0dp | Required | 246 | Section 6.2 | Calc |
| $31_{AR}$ | Average household - pcc | Outturn data:<br>(Measured and unmeasured household consumption * 1,000,000) / (measured and unmeasured household population * 1,000) | l/h/d | 0dp | Required | 225 | Section 6.2 | Calc |
| $32_{AR}$ | Water taken unbilled | Input outturn data | Ml/d | 2dp | Required | 2.41 | Section 6.2 | No uplift applied as per the Revised WRMP19 and WRMP24 methodology. |
| $33_{AR}$ | Distribution system operational use | Input outturn data | Ml/d | 2dp | Required | 0.51 | Section 6.2 | No uplift applied as per the Revised WRMP19 and WRMP24 methodology. |
| | **Leakage** | | | | | | | |
| $34_{AR}$ | Measured non household - uspl | Input outturn data | Ml/d | 2dp | | | | |
| $35_{AR}$ | Unmeasured non-household - uspl | Input outturn data | Ml/d | 2dp | | | | |
| $36_{AR}$ | Measured household - uspl | Input outturn data | Ml/d | 2dp | | | | |
| $37_{AR}$ | Unmeasured household - uspl | Input outturn data | Ml/d | 2dp | | | | |
| $38_{AR}$ | Void properties - uspl | Input outturn data | Ml/d | 2dp | | | | |
| $39_{AR}$ | Distribution Losses | Input outturn data | Ml/d | 2dp | Required | 15.09 | Section 6.2 | No uplift applied as per the Revised WRMP19 and WRMP24 methodology. |
| $40_{AR}$ | Total leakage | Outturn data: Total USPL + distribution losses | Ml/d | 2dp | Required | 28.19 | Section 6.2 | No uplift applied as per the Revised WRMP19 and WRMP24 methodology. |
| | **CUSTOMERS** | | | | | | | |
| | **Properties** | | | | | | | |
| $42_{AR}$ | Measured non-household - properties | Input end of reporting year data | 000's | 3dp | | | | |
| $43_{AR}$ | Unmeasured non-household - properties | Input end of reporting year data | 000's | 3dp | | | | |
| $44_{AR}$ | Void non households - properties | Input end of reporting year data | 000's | 3dp | | | | |
| $45_{AR}$ | Measured household - properties (excl. voids) | Input end of reporting year data | 000's | 3dp | | | | |
| $45.7_{AR}$ | Measured household void properties | Input end of reporting year data | 000's | 3dp | | | | |
| $46_{AR}$ | Unmeasured household - properties (excl. voids) | Input end of reporting year data | 000's | 3dp | | | | |
| $47_{AR}$ | Unmeasured household void properties | Input end of reporting year data | 000's | 3dp | | | | |
| $48_{AR}$ | Total resource zone properties (inc voids) | End of reporting year data :<br>Total non-household properties + total void non-household properties + total household properties + total void household properties | 000's | 3dp | | | | |
| | **Population** | | | | | | | |
| $49_{AR}$ | Measured non-household - population | Input end of reporting year data | 000's | 3dp | | 12.82 | | |
| $50_{AR}$ | Unmeasured non-household - population | Input end of reporting year data | 000's | 3dp | | 1.66 | | |
| $51_{AR}$ | Measured household - population | Input end of reporting year data | 000's | 3dp | | 245.91 | | |
| $52_{AR}$ | Unmeasured household population | Input end of reporting year data | 000's | 3dp | | 493.72 | | |
| $53_{AR}$ | Total resource zone population | End of reporting year data:<br>Unmeasured and measured household population + Unmeasured and measured non-household population | 000's | 3dp | | 754.11 | | |
| | **Metering** | | | | | | | |
| $57_{AR}$ | Total measured household metering penetration (incl. voids) | Outturn data:<br>Measured household properties exc. voids / (measured household properties exc. voids + unmeasured household properties exc. voids) + measured and unmeasured household void properties) | % | 2dp | | | | |
| $57.1_{AR}$ | Total households with a meter installed | Input outturn data (See technical annex for guidance) | % | 2dp | | | | |
| $57.2_{AR}$ | Total numbers of household meters installed | Input outturn data | 000's | 3dp | | | | |
| | **SUPPLY-DEMAND BALANCE** | | | | | | | |
| $16_{AR}$ | Target headroom | Input adjusted reporting year figure or DYAA WRMP value | Ml/d | 2dp | Required | 5.80 | Section 6.2 | No uplift applied. CP AR outturn data template assumed to be representative of a 1 in 200 year Dry Year scenario. |
| $18_{AR}$ | Supply-demand balance (in reporting year) | (Total WAFU - DI) - target headroom | Ml/d | 2dp | Required | -14.80 | Section 6.2 | |