Revised Draft Water Resources Management Plan 2024

Annex 22: Water Neutrality

June 2024
Version 0.1

from Southern Water

Contents

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Glossary

AMP	Asset Management Programme
Ml/day	Megalitres per day (A megalitre is 1,000,000 litres)
SNOWS	Sussex North Offsetting Water Scheme
SNZ	Sussex North Water Resource Zone
WRZ	Water Resource Zone
WRMP	Water Resources Management Plan
WTW	Wastewater Treatment Works

1 Introduction

Water neutrality is not yet defined within legislation. It is a mechanism that is applied to ensure development that takes place does not increase the rate of water abstraction for drinking water supplies above existing levels. Water neutrality directly links the pace of new development to the reductions of water demand that can be achieved. It is a calculation, requiring demand management measures to be in place before development goes ahead.

Natural England published its Position Statement on 14 September 2021, requiring all relevant new development in the Sussex North Water Resource Zone (SNZ), a region that extends from the South Downs up to Crawley (Figure 1) to apply water neutrality. The definition of water neutrality used by Natural England is as defined in the Gatwick Sub regional Water Cycle Study (2020)[1]:

'For every new development, total water use in the region after the development must be equal to or less than the total water use in the region before the new development.'

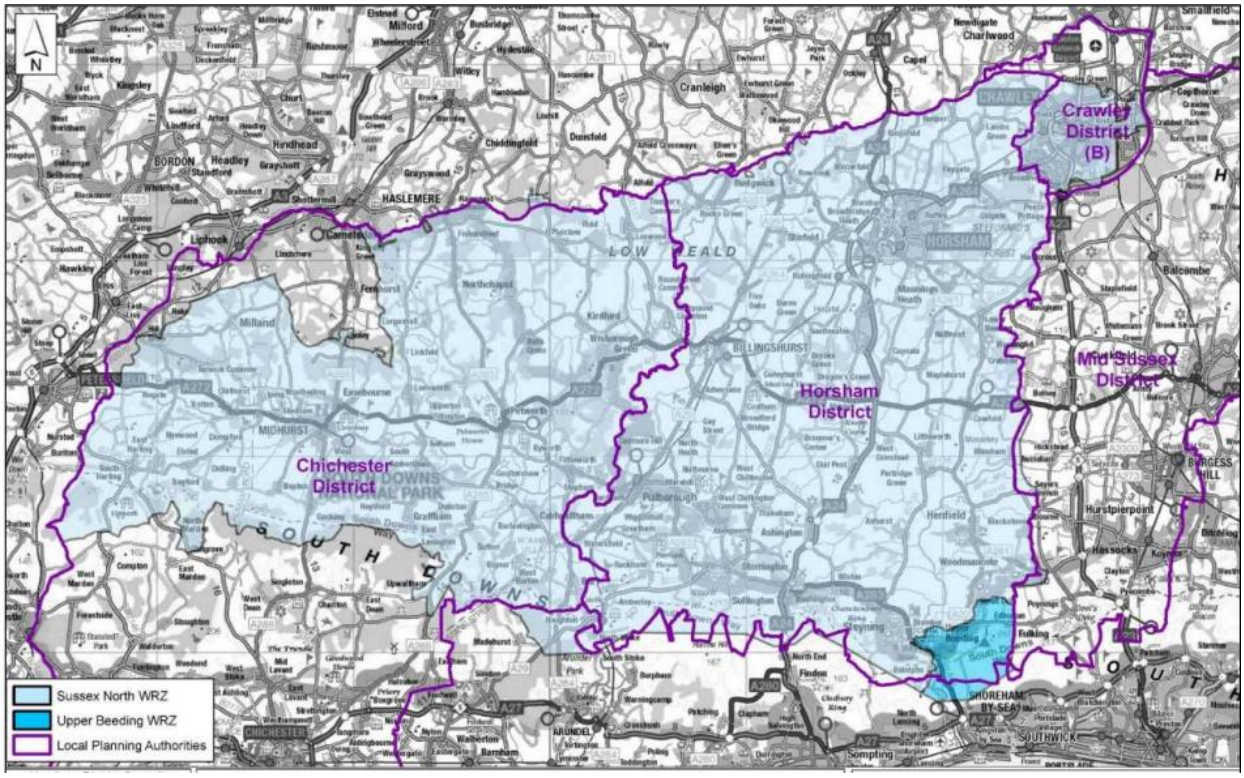

Figure 1. Geographical extent of the Sussex North Water Resource Zone.

In the Position Statement, Natural England advised that groundwater abstraction at Pulborough may be having a negative impact on the protected sites in the Arun Valley, comprising the Arun Valley Special Protection Area, Special Area of Conservation and Ramsar site (the Arun Valley Sites).

These protected sites make up an area of wet meadows on the flood plain between Pulborough and Amberley. There are seven threatened species at these sites, including one which is endangered, the

[1] JBA Consulting, 2020. Gatwick Sub-Region Water Cycle Study. Final Report (August 2020).

Psuedamnicola confusa. This aquatic snail is rarely more than 5mm in diameter but is one of the rarest and most vulnerable freshwater molluscs in Britain. The Arun Valley sites are also of outstanding ornithological importance for wintering wildfowl and breeding waders, with over 20,000 birds overwintering at the site.

We are conducting a detailed sustainability study at our Pulborough surface and groundwater source, including extensive monitoring and advanced numerical modelling, to better understand the potential impacts of our abstraction. The potential for future abstraction licence changes is set out in Annex 9.

Until the sustainability study is complete, we have voluntarily reduced our abstraction at Pulborough to an average of 5Ml/day.

Natural England has advised that, at least until the impacts of groundwater abstraction are better understood, any new development that takes place in SNZ must not add to this impact and making a development 'water neutral' is one way of preventing any further negative impact.

Water neutrality has been integrated into individual planning decisions made by the relevant Local Planning Authorities (LPAs) whilst Natural England works with them to develop a longer-term strategy which integrates water neutrality into the relevant Local Plans.

In order to achieve water neutrality, there are three key steps which must be achieved by new developments (Figure 2). They include:

1. reducing water use, by making new build housing as water efficient as possible by designing in water efficient fittings and appliances;
2. reusing water, for example through rainwater harvesting or grey water recycling; and
3. offsetting any remaining demand in the existing local region. Offsetting means investing in improving the water efficiency of existing properties elsewhere in the SNZ, to make water savings that will offset any additional water use at the new planned development.

Each of the three key steps build on each other i.e. it is essential that steps 1 and 2 are carried out before step 3.

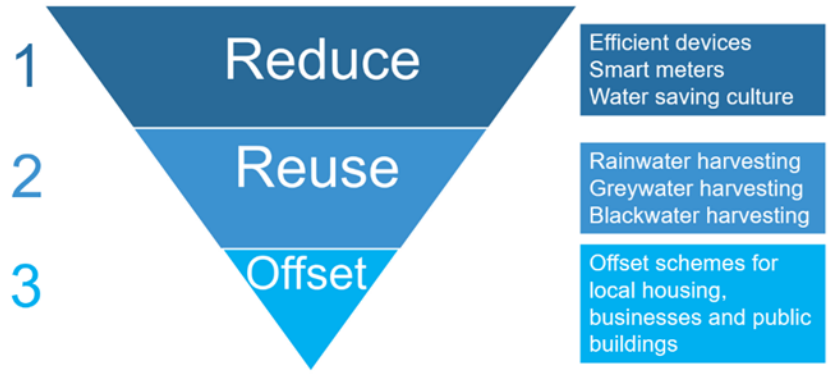

Figure 2: The water neutrality pyramid (adapted from the *Waterwise Guidance, 2021*)[2]

[2] Waterwise, 2021. A Review of Water Neutrality in the UK.

2 Process

Our Water Resources Management Plan (WRMP) process begins with identification of projected growth in population to estimate likely future demand over a 25 to 50 years' planning horizon. It then identifies options to meet the projected demand. These include both supply-side options to increase supply and demand-side options to reduce demand by both promoting water efficiency in homes and businesses as well as reducing leaks in our network.

In SNZ, the output from the WRMP19 is adopted as the baseline of the joint strategy published by the LPAs, setting out their approach to addressing the Natural England Position Statement.

The water neutrality strategy commissioned by the LPAs reflects the projected growth identified in their local plans in terms of number of new homes built. These projections are based on strategic land allocations and may not include speculative development, although all new development in the area is subject to water neutrality.

The LPAs strategy sets out their approach to developing an offsetting platform, known as the Sussex North Offsetting Water Scheme (SNOWS), which will be required as long as the Position Statement remains in place. This process is independent of Southern Water though we are providing our support to establish the baseline and keep our developer customers informed.

The requirements of the Position Statement are focused on the demand arising from development. It centres around the risk of impacts arising from development and is not a question of water availability to meet demand. Southern Water has worked closely with all key stakeholders in the continued development of our response which includes delivering Littlehampton Wastewater Treatment Works (WTW) recycling option for the long term, and development of short-term options whilst this is in progress. During the remainder of AMP7 we will continue to strengthen these relationships and support affected developers through sharing of information and knowledge exchange using our regular webinars and newsletters.

For more information on water neutrality visit our website at Water Neutrality - Southern Water.

3 Strategy

In developing our strategy, we have taken account of the Government's 25-year Environmental Improvement Plan, which proposes water positive and water net zero development.

For us at Southern Water, being 'water positive' means making ourselves a business that conserves freshwater, and we are working hard to reduce the water being used in water-stressed areas. We aim to have a positive impact on our environment and help ensure sustainable water resources for future generations.

Given the existing environmental and developmental pressures in the SNZ, the requirement for water neutrality is likely to remain necessary for as long as there is a risk of adverse effect from the current water abstraction and *may* be required until the protected sites are restored to full conservation status.

In practice, this means that water neutrality will be required in SNZ until an alternative water source to replace groundwater abstraction at Pulborough is available.

The Littlehampton Wastewater Treatment Works (WTW) recycling option, originally included in our WRMP 2019 (WRMP19) and due to be delivered in 2029-30, will reduce reliance on the Pulborough source. In developing our WRMP 2024 (WRMP24), which covers the period 2025-75, we have looked at a potential scenario where Pulborough groundwater source is no longer available, in order to assess alternative options that could be used to maintain the supply-demand balance.

We are engaging with developers and supporting our customers by providing information on water neutrality through regular webinars. We are also engaging with retailers to discuss how we can work together on water neutrality measures that will lead to greater water efficiencies in the 2025-30 planning period.

We are also supporting the trial of a pilot water savings market for trading water credits between buyers and sellers, which may represent a future opportunity for offsetting within our region. We are working with our industry peers and the LAs on this pilot, but this pilot is separate from SNOWS.

A water savings market, when fully mature, could provide an opportunity for developers to offset their development through the purchase and sale of water credits within SNZ to ensure that their developments are water neutral. The pilot will establish a market framework and a market operator who will match up buyers and sellers of water credits. Ahead of introducing the pilot, we are working with the LPAs, developers, Natural England and other key stakeholders to consider how the scheme will interact with the planning process. Developers will be expected to first increase levels of water efficiency and reuse, with the remaining water that cannot be reduced, offset through the purchase of credits. Water savings provided through retrofits will be monitored and assured, using metering data. The pilot is expected to run for the remainder of AMP7 (2020-25) and the early part of AMP8.

Our strategic plan for water neutrality also takes account of our own planned developments in SNZ and sets out a plan for ensuring that, as a business, we are able to comply with the water neutrality requirements. We currently have 62 operational sites in SNZ, of which 8 are water supply works (WSWs) and 54 are wastewater treatment works (WTWs). Of the 54 WTWs, 7 have planned upgrades/development in AMP7. The majority of these planned developments are being delivered utilising permitted development rights, but due to the interface between the General Permitted Development Order (GPDO) and sections 75 to 77 of the Habitats Regulations, we are still required to demonstrate water neutrality. Future developments in AMP8 (2025-30) may also need to comply with water neutrality.

During AMP8 we will further develop our knowledge of how water reuse can generate efficiencies across our operational and business sites. We plan to replace all our existing customer meters in SNZ with smart meters by 2026-27. Smart meters can give near real-time information on water use, including leaks on our customers premises. We will start using the output from our smart meters to proactively engage with our customers to promote water efficiency and set data-led targets for site-specific efficiencies. Improvements in

the data outputs from the smart metering programme will help us target reductions in process losses at our operational sites. Process losses are the sum of all the waste streams for a plant, including water used for emergency showers (required in case of chemical spillages), plant cleaning and maintenance. Treatment plants can be used to recover, treat and recycle as much of this water as possible, to limit the volume of water that is lost.

We will also be establishing our own strategic offsetting plan to meet the needs of our own developments in SNZ. This will reduce the burden on SNOWS and mitigate against any potential development delays.

Our strategy for water neutrality is therefore three-fold:

- Ensuring a long-term water supply in SNZ
- Supporting the developers and working with the LPAs, so that development can proceed.
- Supporting Southern Water's planned development using the water neutrality principles.

4 Delivery

4.1 Ensuring long-term water supply in SNZ

Our work to deliver a resilient supply system in SNZ includes the following supply-side schemes over the next 10 years:

- Rezoning some of our customers in SNZ to get supplies directly from SES Water, rather than from our Pulborough source. Up to 1.3Ml/d is now being supplied by SES Water as a result of this rezoning.
- Increasing bulk import of water from SES Water through rezoning to 4Ml/d in 2025-26 from the current 1.3Ml/d.
- Rebuilding our treatment works at Weir Wood Reservoir with an initial treatment capacity of 5.4Ml/d in 2025-26, increasing to 13Ml/d in 2027-28 and 21Ml/d in 2029-30.
- Refurbishing our groundwater sources at West Chiltington and Petersfield to provide 3.1Ml/d and 1.6Ml/d benefit respectively from 2028-29.
- Delivering Petworth groundwater source by 2029-30 to provide up to 4Ml/d.
- Developing a water recycling plant at Littlehampton to provide up to 15Ml/d from 2030-31.
- Increasing bulk import from SES Water to 10Ml/d from 2033-34.

Beyond the first 10 years, we will be planning to build a reservoir using River Adur high flows to provide 19Ml/d and a recycling plant to deliver up to 40Ml/d. The list of all schemes we are planning in SNZ and across our supply area up to 2075 are included in Annex 15.

4.2 Supporting our customers

We are supporting our customers, including domestic customers, businesses and developers, by:

- Working in collaboration with LPAs to support developers to understand the impact of water neutrality on their developments.
- Prioritising the implementation of smart metering in SNZ. This will provide us with the capability to monitor the effectiveness of water saving measures more closely and monitor progress on our water neutrality goals.
- Delivering webinars and web-based information for developers, to share knowledge and best practice.
- Working to support a pilot of a water savings market in SNZ, in conjunction with Affinity Water and the LPAs in SNZ.
- Providing tariff incentives to support developers who are working on highly water efficient homes outside of the SNZ.
- Using our Bluewave Innovation Hub to trial the effectiveness of water efficient devices, before sharing the results of trials with the developer community.

4.3 Supporting our own planned development

We are doing this by:

- Establishing a strategic offsetting plan for our own developments in SNZ.
- Increasing water efficiency at our sites and in our workplaces. In 2024, we are launching the ‘Time to Act’ programme, which aims to reduce use of potable water through:
  - assessing water use and savings opportunities;

  - changing products and processes to incorporate best practices; and
  - tracking water saving progress and achievements.
- During AMP8 we will identify all of our potable water consumption and develop an action plan to switch to recycled sources wherever possible. This is water that would otherwise have been abstracted from the surrounding water-stressed environment.
- Assessing and monitoring compliance with the water neutrality requirements, by establishing a water neutrality compliance programme. Data on water savings will also feed into our zero-carbon programme.

A summary of these changes is shown in Figure 3, 'Supporting water neutrality.'

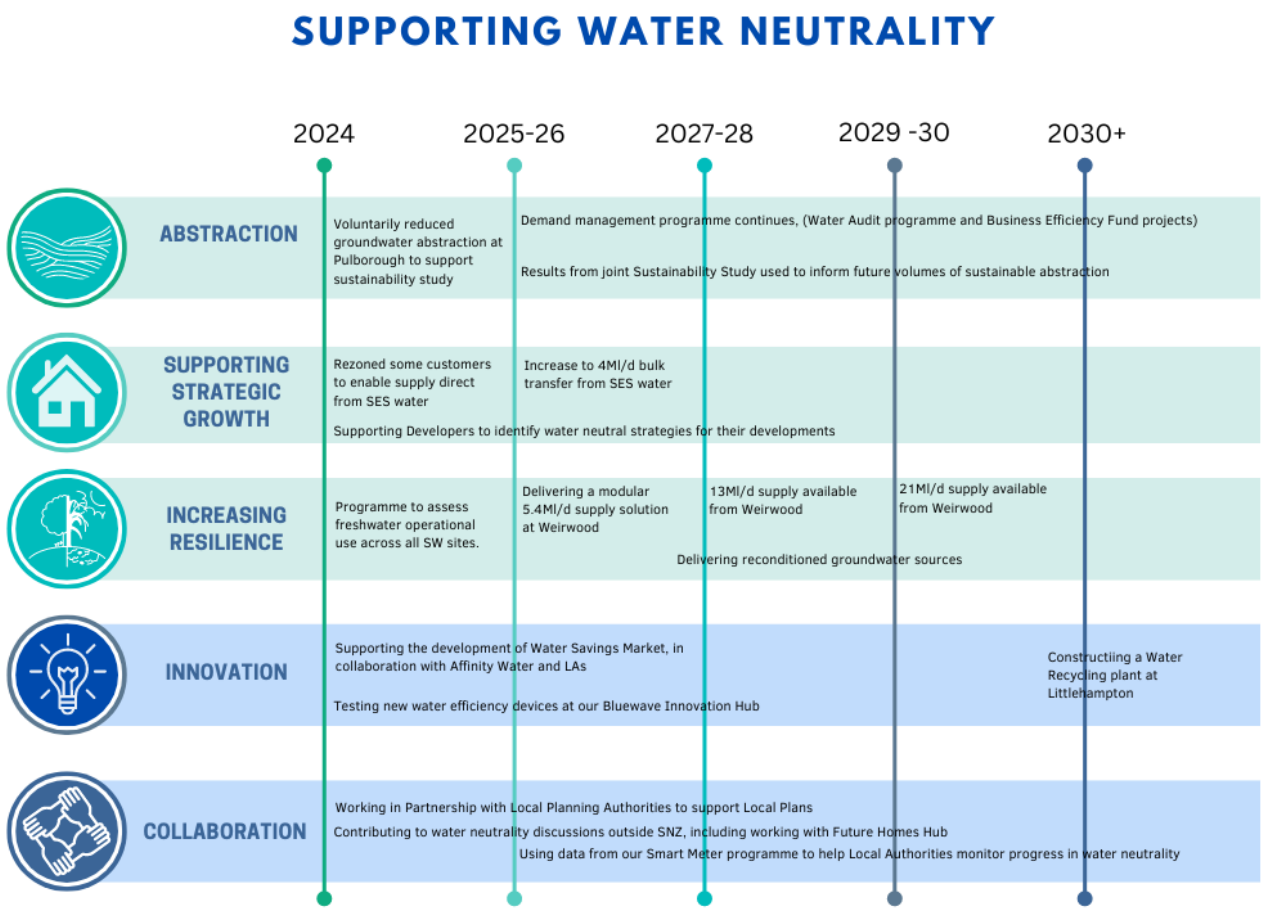

Figure 3: Our strategy for supporting water neutrality in SNZ.