Securing a resilient future for water in the South East

A consultation on our draft Water Resources Management Plan

14 November 2022 to 20 February 2023

from Southern Water

Contents

Introduction

Welcome to our consultation on how we'll secure high-quality, reliable drinking water for the future.

Water scarcity and shortfalls driven by climate change, population growth and increasing demand from industry are a reality.

Our draft water resources management plan is about the decisions we need to take to make sure there's enough water for everyone in our region, now and in the future, and to protect and enhance our shared environment.

This is the first time we've developed a plan collaboratively with other water companies, our regulators and other large water users such as agriculture, energy generators and paper producers.

Our plan enables us to adapt to different challenges in the future. For the first 10 years we follow a "core pathway" with the actions we need to take regardless of future challenges.

Longer-term, our plan includes the different pathways we can choose to follow depending on how much more water we need to protect the environment and ensure our services are resilient. Each pathway has a different mix of options to make sure we're able to provide Water for Life into the future.

Our plan embraces new technology and outlines a mix of actions to reduce demand and increase supply. These will make our services more resilient, meaning the drought restrictions we saw over the summer will become less likely, while we also protect and improve the environment we rely on.

We're maintaining our industry-leading commitments to help customers to use less water and reduce leakage by at least half by 2050.

We're also investigating how we can work with nature to protect our water sources and increase their resilience while also protecting and improving our natural environment for future generations.

Alongside this, we need to invest significantly in new infrastructure. This includes desalination in Sussex and Kent, water recycling across our region, new strategic pipelines to move water to where we need it and making much better use of storage – both underground and using reservoirs.

Delivering this requires ambition and collaboration so we can embrace opportunities to use new technology and ways of working.

We're not starting from square one. We've already helped our customers become some of the most water efficient in the UK and our leakage performance is amongst the best in the industry. We're building on work already underway through our Water for Life – Hampshire programme.

This includes working with Portsmouth Water on Havant Thicket reservoir, the first new reservoir in the South East in decades, and our water recycling pilot – proving a concept that will be rolled out across our region.

I'm confident we will create the resilient water future our customers, rightly, expect. And that we can enhance our natural environment, leaving it in a better condition for future generations.

However, we can't achieve this without our customers and stakeholders. That's why it's so important to me that we hear from as many of you as possible. We look forward to hearing your views and working together to provide Water for Life.

Lawrence Gosden
Chief Executive Officer

Our plan at a glance

Our Water Resources Management Plan looks at least 50 years ahead at our future water needs.

By 2040, if we do nothing, we could face a 300 million litre per day shortfall in water supplies. By 2075, this shortfall could increase to over 500 million litres per day.

This is because more water will be needed as the population grows and less will be available as the climate changes.

We will need to leave more water in the environment to keep it healthy, so we may need to replace more than a quarter of the water supplies we currently use by 2050.

We are also making our water supplies more resilient to severe droughts so we are less likely to introduce emergency restrictions that will limit how much water you can use, such as Temporary Use Bans (TUBs).

This combination of factors means that we need to invest in reducing demand and developing new sources of water.

Our draft plan provides an early look at the mix of options we could use to maintain your water supplies in the future.

Our draft WRMP includes:

- Reducing leakage by at least 50% by 2050 and could reduce it by as much as 62% - by embracing new technology and replacing old water mains
- Our ambition to reduce average daily use to 100 litres per person per day by 2040. However, our demand forecast requires a reduction to 109 litres per person per day by 2040
- Developing water recycling schemes in several locations providing extra water to help supplement the flows in rivers and to refill reservoirs, particularly during dry weather
- Building more pipelines to transfer water from our neighbouring companies, following the development of new sources of water in other areas
- Using desalination plants to turn seawater into drinking water in some areas
- Collaborating with land users and environmental groups to improve the water sources we rely upon, so they are resilient for the future.

We're consulting on our draft plan until February next year and it's really important we hear from our customers and stakeholders.

You can respond to our consultation questions, email or write to us to provide your feedback.

There are lots of ways that you can have your say

1. Take part in our online survey at **southernwater.co.uk/HaveYourSay.**
2. Email **Defra** at **water.resources@defra.gov.uk**, putting Southern Water draft water resources management plan in the subject line, and copying in **wrmp@southernwater.co.uk.**
3. Print out our survey or write a response and send it to Defra at:
   Water Resources Management Plan Consultation (Southern Water)
   Water Services
   Department for Environment, Food and Rural Affairs
   Seacole Ground Floor
   2 Marsham Street
   London
   SW1 4DF.

If you have any issues accessing our consultation or have any questions relating to it please contact us at **wrmp@southernwater.co.uk**.

You can read the technical documents that accompany this consultation at **southernwater.co.uk/wrmp**.

What is a Water Resources Management Plan?

We supply drinking water to more than one million homes and businesses in the South East.

We plan ahead to make sure there will always be enough water available, when and where we need it.

To do this, we work out how much water we will need in the future and how much will be available to supply. If we need extra water, we identify ways to secure supplies. This includes schemes that can either provide more water or reduce demand.

We also look at ways we can work with nature to improve the quality and health of the sources that we take water from. This will help protect and improve the environment, so we have sustainable water supplies in the future.

Every water company in England and Wales produces a WRMP and update it every five years. We must all plan at least 25 years ahead. Our draft WRMP covers the period from 2023–75.

For the first time, a regional plan has informed our WRMP. **Water Resources South East (WRSE)** is producing the regional plan for the South East. The draft regional plan considers the future water needs of the whole region, including the environment and large water-using sectors.

Both of our plans are best value, which means they consider the needs of water users and the environment, and drives increased resilience to droughts and environmental improvements.

WRSE consulted on its least cost emerging regional plan in January 2022 and received over 1,150 responses.

Since March 2022, WRSE has been developing a draft best value regional plan which it is consulting on from November 2022. These plans have informed our draft WRMP. We'll continue to align our WRMP with the regional plan to help futureproof our region's water supplies.

[1] Future-proofing our water supplies, a consultation on our emerging regional plan for South East England WRSE; WRSE, January 2022

Our priorities

Our vision is to create a resilient water future for customers in the South East. Our four key priorities will allow us to achieve our ambitions for the the good of our customers, communities and the environment.

To meet future challenges we know that we'll need to focus on these priorities and take action at different times and at varying pace. We'll also need to adapt to the future changes that will impact on our business.

Our priorities	Our WRMP will:
Ensuring a reliable supply of high-quality water for the future 	• Make our supplies more resilient to severe drought • Reduce leakage • Provide extra water supplies to meet demands of climate change and population growth • Lower water use in homes and businesses
Protecting and improving the environment 	• Reduce water use which will help lower operational carbon emissions • Include nature-based solutions
Understanding and supporting our customers and communities 	• Support our customers and communities to use less water • Help customers understand their water use better
Enabling and empowering our people 	• Use technology and innovation to enhance our performance • Collaborate with stakeholders and partners to take a nature first approach

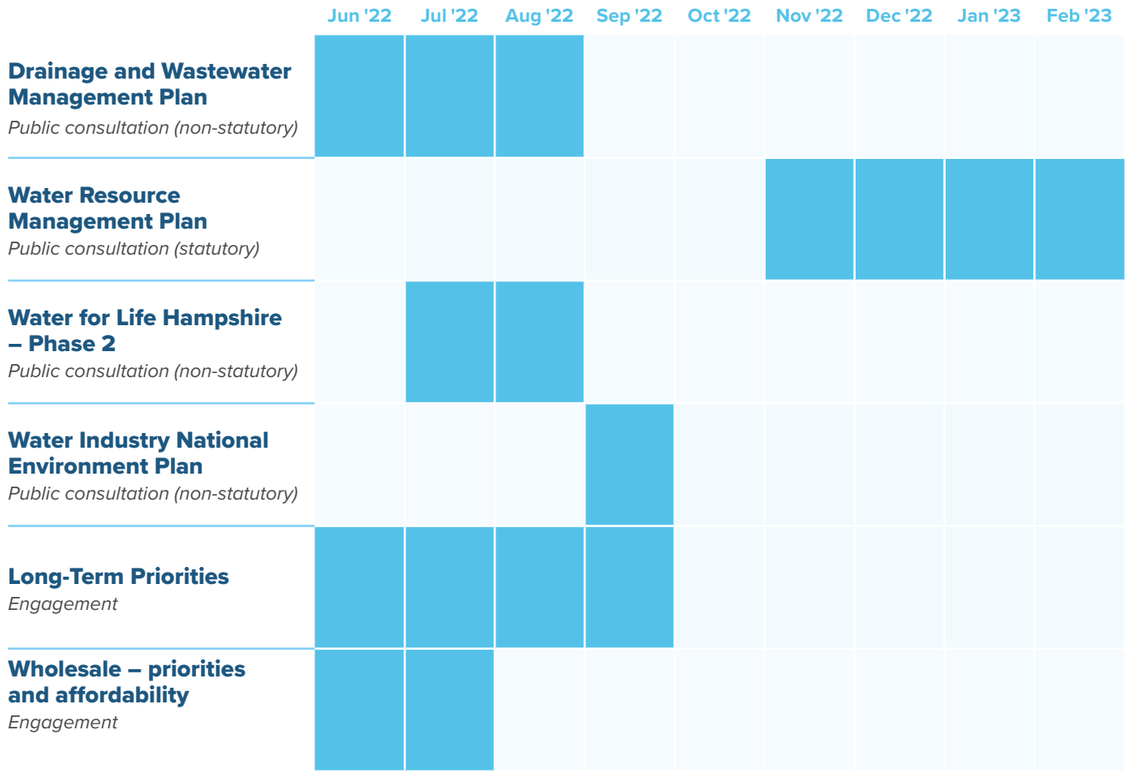
The role of technology

A central part of our long-term strategy is to use technology to help us overcome our future challenges. We are becoming more digitally enabled, using technology from source to tap to make our service smarter, faster and more resilient.

How we are developing our future plans

Our WRMP is one of several strategic plans we develop that help us plan our future investment in your services. The schemes identified through these plans will be included in our Long-Term Delivery Strategy – a 25-year strategy that will inform our five-yearly business plan.

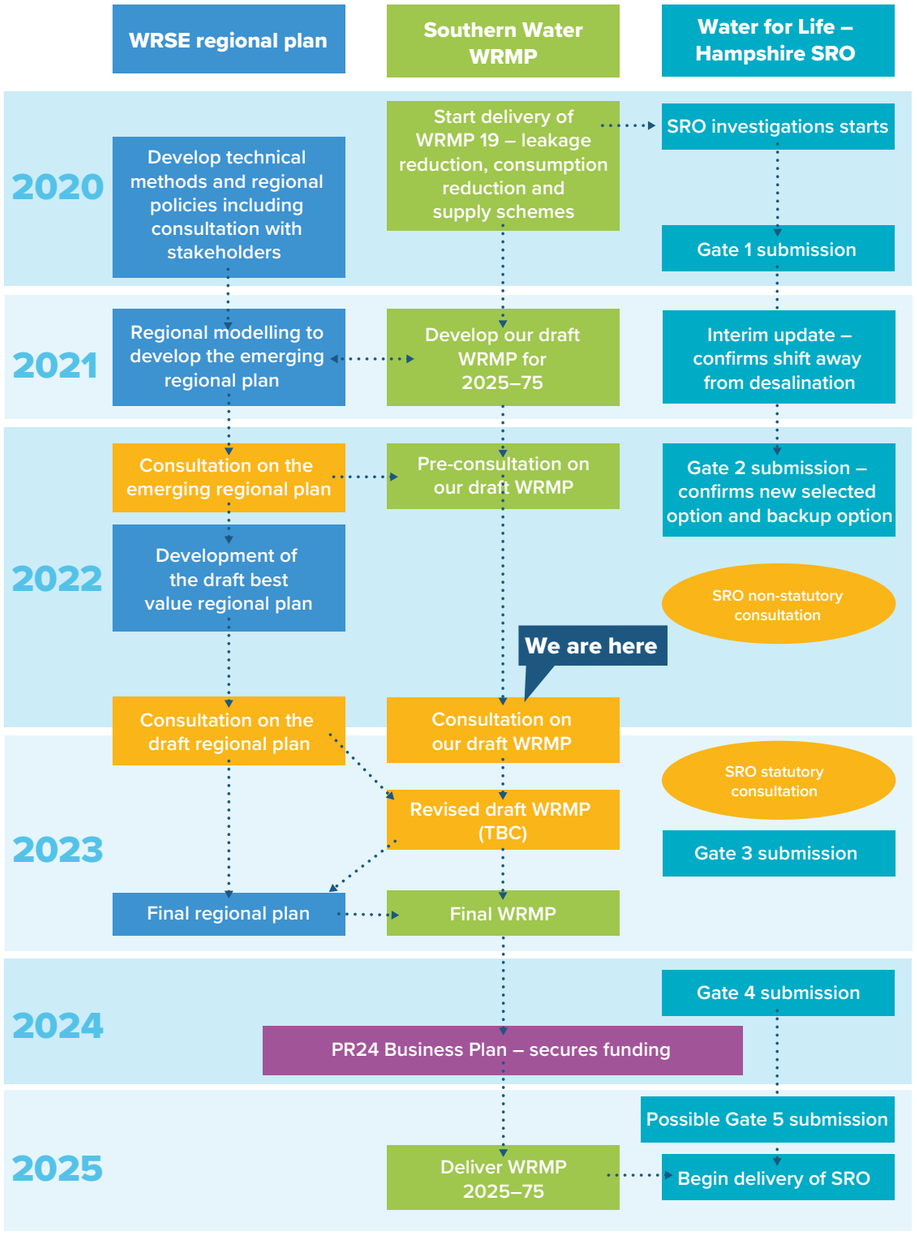
We are currently developing our Long-Term Delivery Strategy and we'll publish it next year alongside our Business Plan for 2025 –30. Ofwat will evaluate our Business Plan and determine the level of investment we can make, setting bills for 2025-2030.



Developing our WRMP

Our journey so far and what will happen next

Our draft WRMP aligns with the regional plan, developed collaboratively with WRSE. We are also investigating some strategic resource options (SROs) which we identified in our current plan (WRMP19). This includes a large SRO, as well as a number of smaller projects, in our Western Area. We describe this as our Water for Life – Hampshire programme.



Strategic Resource Options (SROs)

WRMPs are strategic plans required by law, that demonstrate how a water company will meet its water supply duties. They identify feasible schemes to help achieve the supply demand balance. In our last WRMP, we identified several large schemes that could be needed to provide resilient water supplies for the future. These schemes are described as Strategic Resource Options (SROs). Since 2019, we have been investigating the SROs further, in conjunction with other water companies and RAPID – the Regulators' Alliance for Progressing Infrastructure Development.

We are working closely with RAPID through its collaborative process. This is helping us develop our schemes from concept to delivery and will give us greater certainty from 2025. It involves us following a process where, at specified stages, or gates, we submit more detailed information for RAPID to consider. RAPID then determines whether the option should be developed further.

Our Hampshire SRO is necessary to meet our WRMP19 supply and demand balance, as confirmed in our 2021 WRMP19 Annual Review and RAPID's Gate 2. This project has been progressing in parallel to the development of this draft WRMP.

Our draft WRMP has used updated future forecasts and reflects wider regional needs. Therefore, some of the information around the schemes in this plan may differ slightly to those presented through the RAPID gated process to date. As these processes continue in parallel, information on the schemes will become more aligned.

'The innovative nature of RAPID allows three regulators to come together, collaborate and work with water companies to better understand challenges and manage risks. Ultimately, we want the sector to drive forward solutions that contribute to resilient water supplies that enhance the environment, deliver value for money, meet the needs of public health and protect customers over the long term.'

Paul Hickey, Managing Director, RAPID

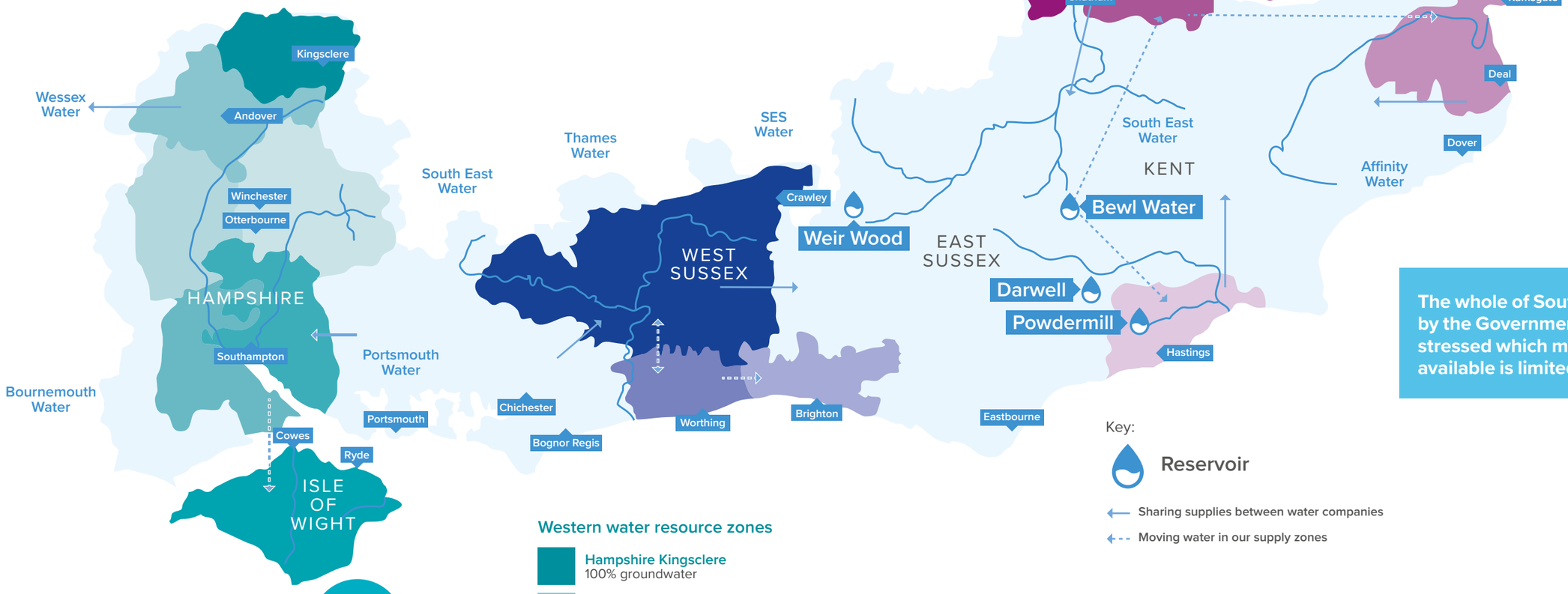
The emerging regional plan published by WRSE in January 2022 provided an early look at the options that could be needed across the region. It objectively assessed 1,400 different options, including the options we have been investigating as part of the SRO process. Once the regional plan and our WRMP are finalised, they will determine the amount of water needed and identify the best value option to secure it. This will inform any revision to our WRMP.

Where your water comes from today

We supply water to parts of Kent, Sussex, Hampshire and the Isle of Wight.

Where the water comes from, how it is supplied and how much is used varies across each county. We divide our supply area into 14 'water resource zones' which are shown on the map.

About 70% of the water we supply comes from groundwater. These supplies are stored underground in rocks and soils called aquifers and we pump them up to the surface. The rest comes from rivers and streams, some of which are supported by chalk-fed groundwater. In some areas, reservoirs store water that is typically pumped from nearby rivers when flows are high. Our natural water resources are split into catchment areas – we take water from eight catchments across the South East.



Key:

Reservoir

Sharing supplies between water companies

Moving water in our supply zones

The whole of South East England is classed by the Government as being seriously water stressed which means the amount of water available is limited.

Western Area

Much of the water supplied in the Western Area comes from underground sources. In South Hampshire, the River Test and River Itchen provide the majority of supplies while on the Isle of Wight around a quarter comes from the River Yar.

Water is transferred from South Hampshire to the Isle of Wight to supplement its water supplies. Water can also be transferred from Portsmouth Water's area to South Hampshire.

89% of homes are metered in Hampshire

95% of homes are metered on the Isle of Wight

Average water use:

Hampshire – 129 litres per person per day

Isle of Wight – 131 litres per person per day

Western water resource zones

- **Hampshire Kingsclere** 100% groundwater
- **Hampshire Andover** 100% groundwater
- **Hampshire Rural** 100% groundwater
- **Hampshire Winchester** 100% groundwater
- **Hampshire Southampton East** 52% river, 48% groundwater
- **Hampshire Southampton West** 100% river
- **Isle of Wight** 47% groundwater, 23% river, 30% transfers

Central Area

Brighton, Worthing and surrounding areas rely predominately on the groundwater sources beneath the South Downs. Sussex North is supplied from a mix of water sources including the River Arun and the Western Rother, Weir Wood reservoir near East Grinstead and a transfer from Portsmouth Water. There are pipelines that allow water to be moved between our Sussex North and Worthing water resource zones in both directions, and from Worthing to Brighton.

84% of homes are metered

Average water use:

139 litres per person per day

Central water resource zones

- **Sussex North** 35% groundwater, 51% river, 8% reservoir, 6% transfers
- **Sussex Worthing** 98% groundwater, 2% transfers
- **Sussex Brighton** 100% groundwater

Eastern Area

Our Kent supply areas take most of their water from groundwater. The rest comes from the River Medway, some of which is stored in Bewl Water reservoir before it is released back into the River Medway where it is abstracted. Hastings in East Sussex takes most of its water from Darwell reservoir which stores water from the River Rother and Powdermill reservoir which stores water from the River Brede. We can transfer water from Medway to Thanet and from Medway to Hastings.

88% of homes are metered

Average water use:

132 litres per person per day

Eastern water resource zones

- **Kent Medway East** 100% groundwater
- **Kent Medway West** 56% river and reservoir 44% groundwater
- **Kent Thanet** 79% groundwater, 21% transfers
- **Sussex Hastings** 5% groundwater, 79% reservoir, 16% transfers

What we've done since our last plan

Since 2020, we have been progressing the schemes identified in our current WRMP.

Reducing leaks and helping customers use less water

We have been helping our customers use less water. Our customers use around 134 litres per day, which is less than in most other areas. However, the COVID-19 pandemic has changed how people are using water. Household water use increased by around 10% because more people worked from home during the pandemic and many still are. Business and commercial water use has fallen. Lockdowns affected some of our work to help people use less, such as fitting meters and carrying out home water audits.

To reduce leaks and help our customers use less water, we have:

- installed 7,000 sensors that move around our pipes to monitor leaks and intelligent loggers so we can detect and repair them quicker
- improved how we manage the pressure within our pipes to reduce leakage, without impacting on customers' supplies
- developed plans to replace some of our leakiest water mains in parts of Hampshire, East Kent and the Isle of Wight which will start next year
- seen 7,000 customers register for 'Get Water Fit', an online service to help them use less water
- carried out around 8,600 in-home water audits and installed more than 15,700 water saving products since COVID-19 restrictions were relaxed
- run a series of behaviour change campaigns using digital media, TV and outdoor advertising such as on buses and at train stations
- developed our water efficiency education programme with the charity City to Sea
- worked in partnership with local councils, schools and other community groups to promote ways to use less water and provide extra help and support.

Developing new water sources and pipelines

This includes work to develop new sources of water and move water around more easily.

We have:

- helped Portsmouth Water get planning permission for a new reservoir at Havant Thicket. Once built, Portsmouth Water will be able to provide us with up to 21 million litres of water per day from their existing sources. Preparatory work to build the reservoir has started and it should be operational by 2029
- improved the connectivity of our network in north Sussex so we can move water around more easily
- installed a new pipe to connect us to SES Water so they can supply some of our customers in Crawley
- connected our pipes to South East Water's so they can provide additional water in north Sussex if needed
- worked with other users who take water from the Western Rother catchment in north Sussex to improve how we manage water supplies
- progressed our plans to recommission two groundwater sources in north Sussex
- investigated sites for an underground reservoir in West Sussex to store water from the Rivers Rother and Arun but none were suitable
- started to change one of our abstraction licences in Kent to give us more flexibility in how we use our groundwater sources
- progressed design work on some new water supply schemes such as water recycling in Littlehampton and on the River Medway and desalination on the Sussex coast
- investigated how we can improve our water transfer network in Hampshire so we can move water around more easily
- worked with Portsmouth Water to see whether they can provide us with any more water from their sources using an existing pipeline
- started to plan a new pipeline that will transfer water from South East Water to our Thanet area which should be operational by 2025.

Protecting the environment in north Sussex

We've been working with the Environment Agency and Natural England to understand how our groundwater source near Pulborough affects nearby habitats. This is so we can agree how much water we should take from it in the future. While this continues, we are using as little as possible from the source. We're working with local councils so there is enough water for new homes in the area without it impacting on habitats and wildlife.

Water for Life – Hampshire

Our last WRMP identified the need for a major new strategic resource in Hampshire, which we're delivering through our Water for Life – Hampshire programme.

Through the RAPID gated process, we undertook an options appraisal process that investigated alternative options for this new strategic resource. We considered a range of environmental and planning criteria, alongside the delivery of our legal obligations to rank the different options. These included:

- a desalination plant on the Solent
- alternative water recycling schemes
- a transfer from the West Country
- a direct pipeline from Havant Thicket reservoir to our Hampshire supply area.

We found the desalination plant was the lowest ranked of the options, so we are not progressing it any further. This was supported by our regulators. We have continued investigating options for a water recycling scheme and pipeline.

This led to the development of an option – The Hampshire Water Transfer and Water Recycling Project – that involves a new pipeline from Havant Thicket reservoir to a water supply works in south Hampshire. The pipeline could transfer up to 90 million litres per day. A new water recycling plant at Havant would produce highly treated, recycled water to supplement the water supplies in Havant Thicket reservoir. Currently, we need this to provide between 15 and 60 million litres per day. This would help keep the reservoir topped up, including during drought periods.

This option has emerged as our preferred scheme following our options appraisal as part of the RAPID gated process. We're also working on a backup option, consisting of a water recycling scheme that would transfer highly treated water into a new lake. This would act as a buffer, before the water is transferred to a water supply works and treated to drinking water standard.

Options appraised through the RAPID gated process were included in the many options put to WRSE and appraised separately for the needs of the regional plan.

We have engaged with regulators, local stakeholders and customers throughout these investigations to understand and incorporate their views. Between 5 July 2022 and 16 August 2022, we consulted on this scheme as we need to progress it urgently to address the shortfall of water in Hampshire. We received 570 responses from a wide range of organisations.

In summer 2023, we will hold our next public consultation and engage on the developing Hampshire Water Transfer and Water Recycling Project, especially the proposed pipeline route, more details on the proposed sites for the water recycling plant and any likely environmental impact from the proposals.

To find out more, visit **southernwater.co.uk/our-story/water-for-life-hampshire**.

Protect and improve the water sources we rely upon

We rely on water from the natural environment to supply our customers.

Since 2020, we have strengthened our focus on catchment management. Our team is delivering catchment and nature-based schemes across the region. They are working with local stakeholders to protect and restore the environment, so it is more resilient and able to adapt to climate change. We have:

- been working with farmers, farm clusters and local stakeholders across our region to address nitrates. This includes funding a series of farm trials and reduction measures to prevent further nitrate pollution
- continued monitoring on the River Itchen, River Test, Western Rother, River Arun and the River Medway to address pesticide risk. We have undertaken land mapping and modelling to help prevent further pesticide pollution
- been working with farmers in the River Beult catchment where water sources are at high risk from pesticides. We have funded a full-time position at Kent Wildlife Trust and helped establish a farming cluster
- continued monitoring the River Test and Itchen to understand how our abstraction affects them. We have started a project on the River Anton (Upper Test) to improve this chalk stream in partnership with local stakeholders
- progressed our work to protect and improve the Brighton Chalk Block with The Aquifer Partnership. This includes Brighton and Hove City Council, South Downs National Park Authority, the Environment Agency and others. We have been working with farmers, allotment owners, golf courses and the equine sector
- been monitoring the Western Rother and River Arun to understand the impact of our abstractions. We are also planning a natural capital mapping exercise to identify where we can improve the environment
- identified schemes to improve water quality and restore habitats with South East Rivers Trust including on the River Beult.

Managing our water supplies during droughts

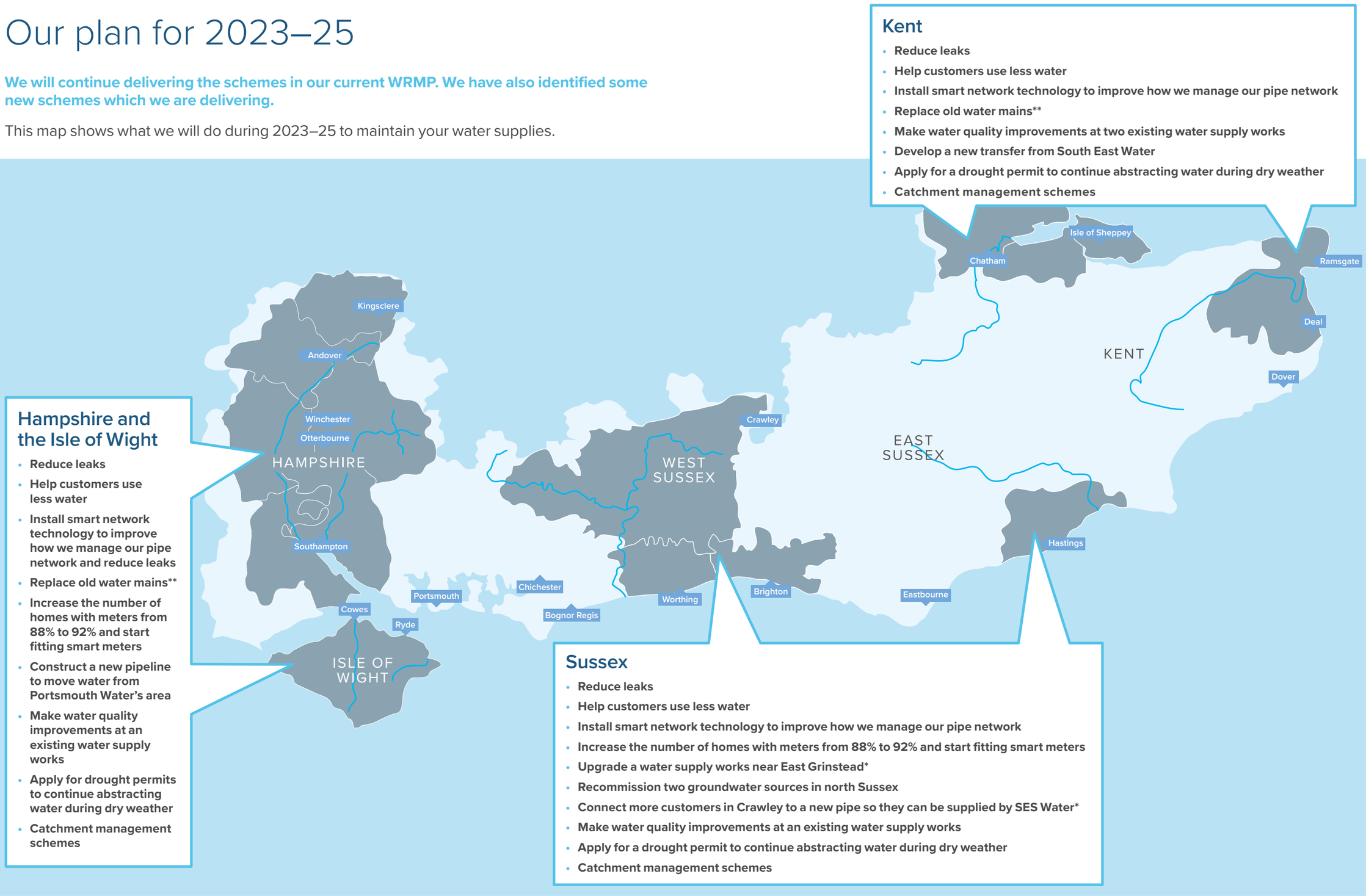
In our WRMP19, we included options to apply for drought orders and drought permits for some of our water sources. These allow us to continue abstracting water during prolonged dry weather – such as we experienced in summer 2022.

We applied to the Environment Agency for a drought permit to continue taking water from the River Test in July 2022. This meant that, for the first time since 2012, we had to impose restrictions on our customers' water use. This was to protect the river and ensure enough water was available for essential supplies. Drought orders and permits and temporary restrictions on customers' use remain an option in our plan in line with our Drought Plan.

Our plan for 2023–25

We will continue delivering the schemes in our current WRMP. We have also identified some new schemes which we are delivering.

This map shows what we will do during 2023–25 to maintain your water supplies.



Hampshire and the Isle of Wight

- Reduce leaks
- Help customers use less water
- Install smart network technology to improve how we manage our pipe network and reduce leaks
- Replace old water mains**
- Increase the number of homes with meters from 88% to 92% and start fitting smart meters
- Construct a new pipeline to move water from Portsmouth Water's area
- Make water quality improvements at an existing water supply works
- Apply for drought permits to continue abstracting water during dry weather
- Catchment management schemes

Kent

- Reduce leaks
- Help customers use less water
- Install smart network technology to improve how we manage our pipe network
- Replace old water mains**
- Make water quality improvements at two existing water supply works
- Develop a new transfer from South East Water
- Apply for a drought permit to continue abstracting water during dry weather
- Catchment management schemes

Sussex

- Reduce leaks
- Help customers use less water
- Install smart network technology to improve how we manage our pipe network
- Increase the number of homes with meters from 88% to 92% and start fitting smart meters
- Upgrade a water supply works near East Grinstead*
- Recommission two groundwater sources in north Sussex
- Connect more customers in Crawley to a new pipe so they can be supplied by SES Water*
- Make water quality improvements at an existing water supply works
- Apply for a drought permit to continue abstracting water during dry weather
- Catchment management schemes

* New scheme not included in WRMP19 ** part of our leakage reduction programme

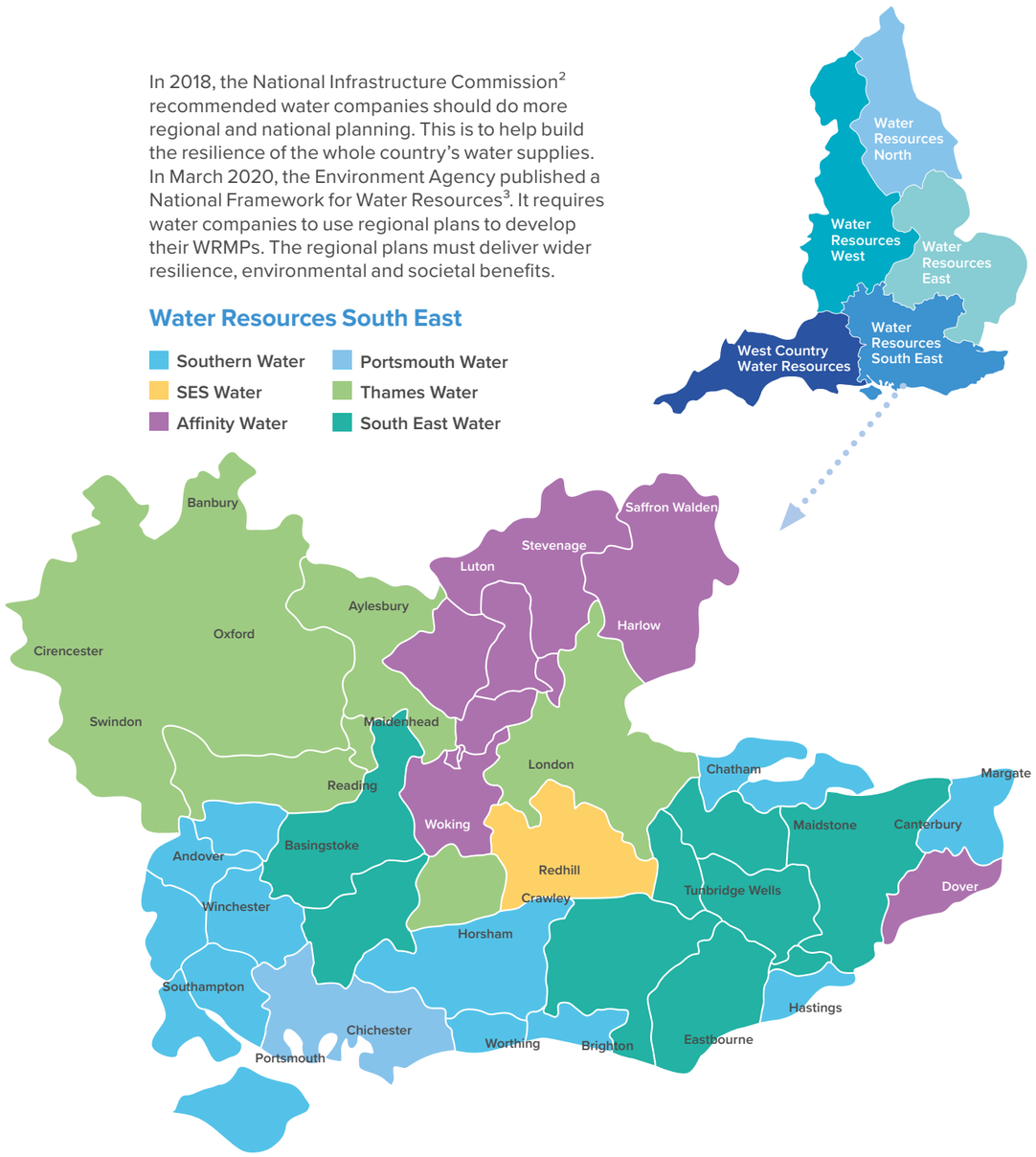
Regional plans

How we've changed our approach to water resource planning

In 2018, the National Infrastructure Commission[2] recommended water companies should do more regional and national planning. This is to help build the resilience of the whole country's water supplies. In March 2020, the Environment Agency published a National Framework for Water Resources[3]. It requires water companies to use regional plans to develop their WRMPs. The regional plans must deliver wider resilience, environmental and societal benefits.

Water Resources South East

- Southern Water
- Portsmouth Water
- SES Water
- Thames Water
- Affinity Water
- South East Water



We've been part of WRSE for nearly 30 years, working collaboratively with our neighbouring companies to plan the region's water supplies.

This has now led to regional planning being adopted across the country. There are four other regional groups, and all the English water companies are a member of at least one.

[2] Preparing for a drier future, England's water infrastructure needs: The National Infrastructure Commission, April 2018
[3] Meeting our future water needs: a national framework for water resources: Environment Agency, March 2020

Regional plans look beyond the boundaries of the individual water companies. They identify the options that will deliver the most benefit to people across the region, its environment and the sectors that rely most on water. This could result in the identification of different options than if the six companies continued to develop their plans on their own. This could include options that one company would develop, which could provide water to others.

Together with WRSE, we have produced updated forecasts which are being used to predict how much water we'll need in the future. WRSE published an emerging regional plan in January 2022 for consultation. The plan presented the most cost-efficient solution for securing the region's water supplies, while meeting all the legal, regulatory and policy outcomes required.

WRSE has updated the plan with assessments of the extra benefits it could deliver such as increasing biodiversity, enhancing natural capital and making water supplies more resilient. WRSE is consulting on the draft best value regional plan from November 2022 until February 2023. It will then update its plan, working with the other regions to ensure alignment.

We will update our draft WRMP with feedback from this consultation and WRSE's consultation on its draft regional plan. If our plan changes, we will likely re-consult next year.

What is a best value plan?

A best value plan considers a range of factors beyond economic cost. This helps identify the wider benefits water resource schemes can deliver. Together with WRSE we have developed a best value framework. The framework includes criteria and metrics to assess the different options that could feature in the regional plan. You can read a summary of **WRSE's best value planning framework here**.

Do you agree that our WRMP should reflect the best value regional plan, so we are aligned with our neighbouring water companies?

How we have developed our draft plan

We are working with WRSE to develop the regional plan. We intend for our final WRMP to align with the regional plan.

Together, we have:

- received more than 1,150 responses to an emerging regional plan consultation (January to March 2022)
- developed an adaptive planning approach that represents a range of future scenarios
- developed the technical methods being used to produce the regional plan
- developed and applied a framework to identify our best value plan – using criteria and metrics developed with customers' and stakeholders' preferences
- developed a range of population and climate change scenarios
- worked with the Environment Agency to develop a range of future abstraction reduction scenarios to determine how much water we should leave in the environment to protect and enhance it, this work is ongoing
- produced forecasts to project how much extra water the region needs
- developed an environmental assessment process that includes all the legal requirements
- included valuation techniques such as biodiversity net-gain and natural capital in our environmental assessment and conducted an initial environmental assessment
- listened to the views of our customers to understand their priorities and preferences
- identified more than 2,400 options, including a range of new options such as nature-based solutions and schemes with other water users
- assessed these options to identify which the regional plan should consider
- rejected over 1,000 options because they are too damaging to the environment or not reliable enough sources of water
- included 1,400 options in the regional investment model
- identified which set of options, when combined, will deliver the water we need
- published a draft best value regional plan for consultation.

What do you want from your water service?

We've engaged with more than 3,000 customers and stakeholders to develop our draft WRMP.

Customers have told us they:

- support the collaborative approach being taken to long-term water resource planning through WRSE
- understand the challenges of population growth and climate change and support us taking action to ensure resilient water supplies
- expect us to protect the environment
- welcome the focus on reducing abstraction, although they want to see more detail on how this will be achieved
- expect us to start by making use of the water we already have by reducing leakage and promoting water efficiency
- have concerns about over-reliance on demand-side activity
- welcome the balance of different water supply options in the emerging regional plan, so we are not reliant on one type more than others
- particularly welcome aquifer storage and recovery as being innovative and having a positive environmental impact
- feel water recycling is an important part of the long-term solution because its sustainable and environmentally friendly, but assurances are needed around water quality
- view reservoirs as positive because of the environmental, health and community benefits they can bring
- have some concerns about desalination and water transfers from other regions
- support catchment management, although it's recognised it may only produce a small amount of extra water.

What are we planning for?

We are planning to deliver resilient water supplies for the future. Our draft WRMP looks ahead to 2075 to understand how much water we are likely to need.

We provide around 560 million litres of water per day. In the future, if we do nothing there will be a shortfall in water supplies. We could need:

- an extra 238 million litres of water per day by 2030
- an extra 319 million litres of water per day by 2035
- between 339 and 527 million more litres of water per day by 2050
- between 370 and 596 million more litres of water per day by 2070.

This is because there are three main pressures on our water supplies – a growing population, climate change and the need to protect and improve our environment.

We develop a range forecasts for each of these pressures to help us understand what impact different future scenarios could have on our water supplies. This is important as the further ahead we look, the more uncertain it gets so our plan must be able to adapt to the future that occurs.

Population growth

The population in the areas we supply is projected to grow between 6% and 32% from 2025–75. Our growth forecasts are based on a variety of projections including local authority housing plans and data produced by the Office of National Statistics. Growth hot spots are expected to include Andover, parts of rural Hampshire and Worthing in West Sussex.

This could result in the demand for water increasing by between 63 million and 180 million litres per day by 2075 as we need to supply more people, although this will depend on how water efficient we all become.

Climate change

Climate change is expected to reduce how much water we can supply from some of our existing water sources. This means that during drought events, which are expected to become more frequent, there won't be as much water available.

We've considered a wide range of drought events. This includes some which are more severe than those we have experienced in the past. This helps us understand which of our water sources are likely to be most affected so we can plan ahead. We've used the latest UK climate projections (CP18) produced by the Met Office. This shows that we could lose up to 37 million litres of water per day by 2075.

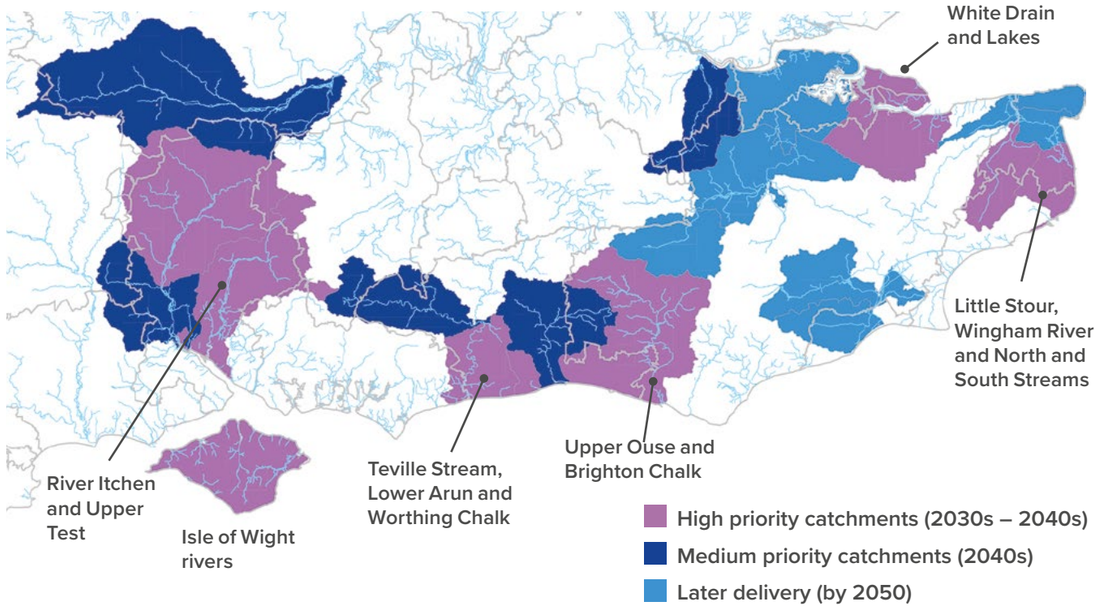
Environmental protection and improvement

The biggest challenge we face is how to sustainably provide water. This means that we will need to reduce how much water we abstract from some of our existing, more sensitive sources and replace them with new ones.

We still don't know exactly where, when or by how much we'll need to reduce our existing abstractions by. WRSE's draft regional plan estimates that, region-wide, we could need to reduce abstraction by between 390 million litres per day and 1,100 million litres per day by 2050 to protect the environment.

We have already reduced how much water we take from the Rivers Test and Itchen during a drought by 190 million litres per day to protect these iconic chalk streams. Additionally, we might need to further reduce how much water we take from sources across our region by between 93 million litres per day and 250 million litres per day by 2050 during droughts. This could mean replacing over a third of the water we currently supply.

This map shows where and when we may need to reduce our abstraction in the future.



We have investigations underway into most of our groundwater sources with a focus on those that support chalk streams. This includes considering where we might cap how much water we abstract from certain sources to prevent damage to the environment. We are also looking at where abstraction reduction and other catchment-focused activities could deliver long-term environmental benefits.

Our high-priority catchments are those where we are likely to need to reduce our abstractions by 2040. These investigations will inform what is included in the next Water Industry National Improvement Programme (WINEP). We are collaboratively developing this with the Environment Agency and local stakeholders.

The sources we are currently investigating include:

- the River Itchen
- the Upper River Test
- the Isle of Wight rivers
- the Teville Stream and Worthing chalk sources
- the Lower Arun sources
- the Upper Ouse and Brighton chalk sources
- the Little Stour and Wingham River
- White Drain and Lakes
- North and South Streams.

This work is continuing and will ultimately provide a long-term environmental forecast on which we will base our WRMP.

Increasing resilience to drought

Droughts occur when there is period of prolonged, dry weather. The National Infrastructure Commission found that, nationally, there was a one in four chance of a serious drought occurring by 2050. The Government has set a new planning requirement for water companies to make their supplies more resilient so that emergency restrictions would only be needed in a one in 500-year drought event. The UK has not experienced a drought this severe since we started recording rainfall data over 100 years ago.

We already plan to this level of resilience. However, we rely on drought orders and drought permits that allow us to continue abstracting water during dry weather.

Our aim is to reduce our reliance on these measures and stop using them by 2040 at the latest. To do this, we need to find 120 million litres of extra water per day. This will help protect the environment and increase our resilience. After 2040, we would only use them if we experienced a severe drought (more serious than a one in 500-year event).

How our WRMP links to our Drought Plan

Water Resource Management Plans look ahead to identify the investment needed to secure water supplies for the future, while Drought Plans set out what we will do if a drought occurs.

Our Drought Plan takes a phased approach and explains what measures we will take as a drought becomes more serious. This includes making more water available such as by continuing to abstract water during dry weather, and reducing demand by introducing restrictions on water use.

We are more likely to need to introduce drought actions in Hampshire and the Isle of Wight until we develop new sources of water to replace those no longer available due to changes in our abstraction licences. This has been agreed with the Environment Agency.

You can read more about our Drought Plan on our website: **southernwater.co.uk/our-story/water-resources-planning/our-drought-plan**.

To protect the environment, we currently have a lower level of service in our Central area, covering West Sussex and Brighton and Hove compared to our target. This means up to 2027 there is an increased likelihood of needing to impose restrictions on water use. We have set out our plan to address this gap. Do you have any comments or concerns about this level of service in our Central area and our plan to address it?

We propose to stop using drought orders and permits that allow us to continue abstracting from the environment after 2040, unless we experience a severe drought. This means we'll need to develop new water supplies to replace them. Do you agree with this approach and the timescale we are proposing to deliver it?

Drought actions	Likelihood of use		
	Hampshire and Isle of Wight	West Sussex and Brighton & Hove	East Sussex and Kent
Temporary Use Bans	Once in every five years on average until 2030 Once in every 10 years after 2030	Once in every five to 10 years on average until 2027 Once in every 10 years after 2027	Once in every 10 years on average
Drought Order to restrict water use – Non-Essential Use Ban	Once in every 20 years on average	Once in every five to 10 years on average until 2027 Once in every 20 years after 2027	Once in every 20 years on average
Emergency drought measures – standpipes and rota cuts	Less than once in every 200 years until 2040 Once in every 500 years after 2040	Less than once in every 100 years until 2030 Less than once in every 200 years between 2030 and 2040 Once in every 500 years after 2040	Less than once in every 200 years until 2040 Once in every 500 years after 2040
Drought orders and drought permits to increase supplies	Once in every five years until 2030 Once in every 20 years until 2040 After 2040 no use of drought orders or drought permits	Once in every 20 years until 2040 After 2040 no use of drought orders or drought permits	Once in every 20 years until 2040 After 2040 no use of drought orders or drought permits

Planning for an uncertain future

We know the future is uncertain which is why we have developed an adaptive plan to secure our future water supplies.

WRSE used a range of forecasts for population growth, climate change and abstraction reduction to predict what different scenarios would mean for water supplies across the region. It used these scenarios to develop and test its plan to futureproof water supplies.

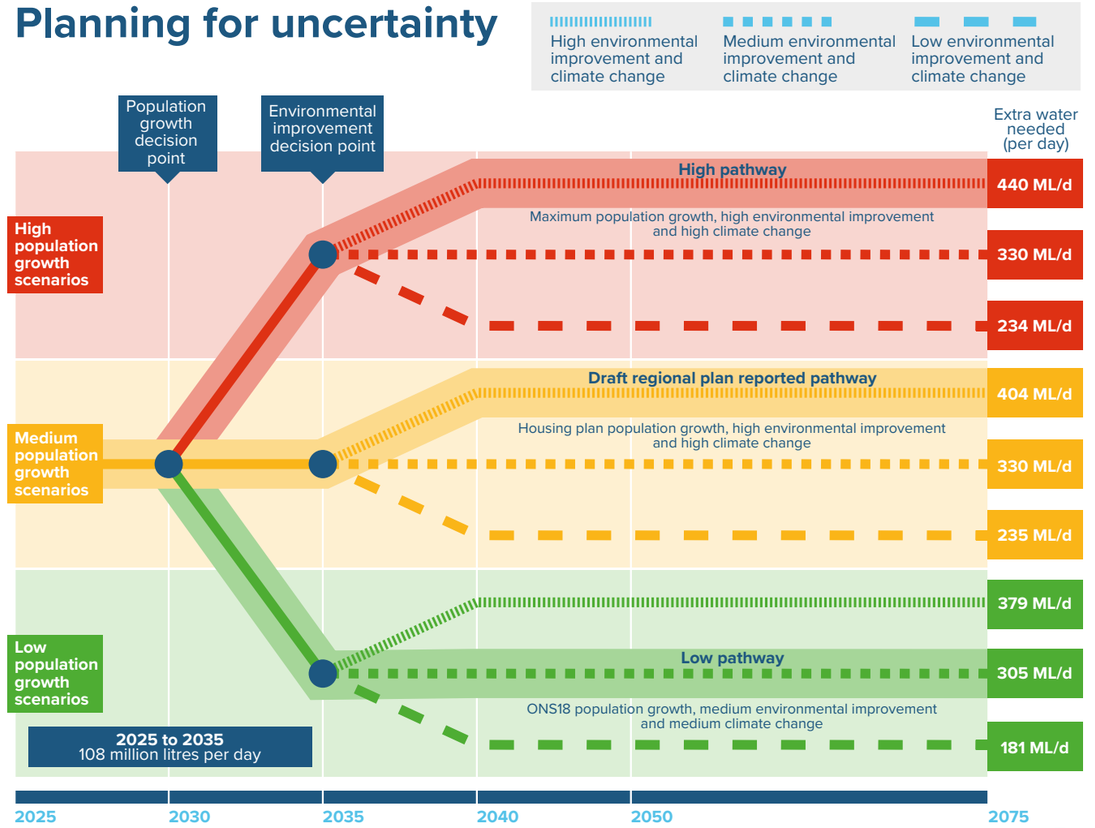
This adaptive planning approach means we can see how much water would be needed in different future scenarios and which options we might need to develop in each. WRSE's draft regional plan has identified a core pathway to 2035, which outlines the 'no regrets' options needed in all future scenarios.

In 2035, this branches into three pathways depending on the level of population growth we could experience. After that, there are nine pathways we could experience depending on the impacts of climate change and how much we need to reduce abstraction to improve the environment.

Below we show how much additional water we may need when we look at some different future scenarios we could face. In each, abstraction reduction is the biggest driver of new water supplies.

We will update our draft WRMP with feedback from our consultation and WRSE's draft regional plan consultation. This will enable us to identify the 'no-regrets' options needed and which we must progress urgently.

Planning for uncertainty



We have considered a range of future scenarios in our adaptive planning approach. Are there any other future scenarios that you think we should consider?

What options have been considered?

We have considered a range of different options that could either lower the demand for water, protect our existing supplies or make more water available.

Reducing leaks

Reducing how much water is lost from leaks on our pipes and the pipes and plumbing in our customers' homes and business.

Pros: Lower levels of leakage will reduce how much water is wasted and will make our supplies more resilient. It could help to avoid the need to develop some new sources of water. It will also help reduce carbon emissions.

Cons: The more leakage is reduced the harder and more expensive it becomes to find the remaining leaks. Some activities like replacing old water mains can cause disruption for local communities. Further reduction in leakage will be dependent on new technology be developed.

Reservoirs

We could build new reservoirs to store water from rivers when flows are high and from other sources, such as water recycling plants. We could also make our existing reservoirs bigger.

Pros: They can provide a resilient water supply, including during the summer. They can provide long-term benefits to communities and the economy such as new leisure and recreational facilities.

Cons: There are few suitable locations within our supply area. Reservoirs can take a long time to plan and build, and their construction could impact on local communities and the environment.

Helping customers use less water

Reducing demand for water by working with our customers to help them become more water efficient.

Pros: Lower levels of water use across society will help make our water supplies more resilient and could avoid the need to develop some new sources of water. It will also help reduce carbon emissions.

Cons: It is reliant on people taking action and maintaining a lower level of water use.

Water recycling

Treated wastewater would undergo further, enhanced treatment. The water would be either released into a river, to boost flows and enable us to abstract it again, or into an existing lake or reservoir. The water would be treated to drinking water standard before being supplied to customers. It is a technique used widely in other parts of the world such as California.

Pros: It can provide a resilient water supply, including during severe, prolonged droughts. Recycling plants can be made bigger if more water is needed in the future.

Cons: It is energy intensive, can involve constructing long pipelines which are disruptive to build and could impact on the environment. The approach taken will depend on which catchment the water is released back into.

Drainage and Wastewater Management Plan (DWMP)

For the first time, we are developing a Drainage and Wastewater Management Plan (DWMP) for our supply area. It is considering the long-term management of our wastewater network.

It identifies that water that is currently released out to sea is a valuable resource which could instead be recycled back into our catchments and used again to provide additional drinking water supplies. Our draft WRMP has several schemes that could recycle treated water.

We consulted on our draft DWMP until September 2022 and will publish an updated version soon. You can read more about our DWMP here: **southernwater.co.uk/dwmp**.

Desalination

Seawater would be abstracted and treated to drinking water standard before being supplied to customers. Desalination is used in the Middle East and Africa. There is also a desalination plant in London.

Pros: It will provide a resilient water supply, including during severe, prolonged droughts. Desalination plants can be made bigger if more water is needed in the future.

Cons: It is energy intensive, expensive to run and could impact on the marine environment. The concentrated salt byproduct must be safely disposed of.

Transfers from other water companies

Water could be moved into our area from a neighbouring company, following the development of a new water source or additional water being made available.

Pros: New strategic resources could be developed in one area that provide benefit to multiple companies, providing more resilient water supplies.

Cons: The construction of new pipelines can cause disruption to local communities.

Increasing underground water supplies

We could abstract water from rivers during the winter when flows are high and pump it underground to increase water supplies within the aquifer. Managed Aquifer Recharge (MARS) which involves supplementing the natural water supply within the aquifer and Aquifer Storage and Recovery (ASR) which involves developing additional underground storage.

Pros: It has low carbon and environmental impact and will provide additional water supplies during the summer.

Cons: There are limited locations where it can be used because it requires specific ground conditions. It can take a long time to test whether a scheme will be possible.

Groundwater source improvements

We could improve how we abstract water from our existing groundwater sources so more is available, without impacting on the environment.

Pros: Low carbon impact and little disruption to the local area.

Cons: The amount of additional water available will be limited.

Catchment management and nature-based solutions

We could collaborate with landowners, farmers and environmental groups to improve the quality of our water sources and make them more resilient to drought. This could make some additional water available and help adapt to climate change impacts whilst improving habitats for wildlife.

Pros: It will help improve the environment, reduce our need to treat water and deliver wider benefits such as increased biodiversity and reduced flood risk.

Cons: Limited additional water will be made available and the effectiveness of some of the techniques are uncertain and need further investigation.

Drought orders and permits

During periods of severe dry-weather, we can apply to either continue taking water or take more water from the environment to maintain supplies. These are usually accompanied by restrictions on customers' water use. We're committed to no longer using these after 2040.

Pros: They give us extra flexibility during droughts to maintain essential supplies. We would need to invest more to phase out their use before 2040.

Cons: They risk damaging the environment at a time when water availability is already stressed. Restrictions on customers' use are unpopular and may cause disruption to our daily lives and economic activity.

Our strategy to supply water

Our draft WRMP has been directly informed by our work as part of WRSE on the draft best value regional plan, which identified four priorities to secure water supplies.

1. **Efficient use of water and minimal wastage across society.**
2. **New water sources that provide resilient and sustainable supplies.**
3. **A network that can move water around the region.**
4. **Catchment and nature-based solutions that improve the environment we rely upon.**

Efficient use of water and minimal wastage across society

Saving water and reducing wastage across society is critical to help improve the environment and make our water supplies more resilient. WRSE's draft regional plan shows that, by 2050, ongoing demand management could provide over half the additional water needed.

Saving water and reducing wastage will secure up to 40% of the water we need by 2040, including the temporary restrictions on water use included in our Drought plan. This then falls in future years as we develop more new sources and stop using drought orders and permits.

Reducing leakage

Reducing leakage is at the forefront of our activity to secure resilient and sustainable water resources. We're proposing to reduce leakage by at least 50% by 2050, and could increase this to 62% depending on how we deliver it. We have one of the lowest levels of leakage of all the water companies. At present, it accounts for 17% of the total water we put into supply. By 2050 we will have reduced leakage to less than 8% under average weather conditions.

Leakage today (2021/22): 92 million litres per day

Leakage by 2050: 46 million litres per day

How could we do it?

We'll:

- improve the monitoring of our water network by installing more sensors and bring all our leakage data together into a digitalised system to help us detect and prioritise repairs
- improve how we manage pressure in our network
- replace water mains that are prone to frequent bursts and leaks
- roll out smart meters to our customers which alert us to leaks at their homes and businesses and we'll help get them fixed quickly
- make use of emerging technology such as remote sensors, thermal imagery, satellites and drones to detect leaks
- progress the development of innovative, fibre optic technology to provide data about leakage across the network.

Do you support our plan to at least halve leakage by 2050?

Water efficiency

Helping customers use less water is essential to securing a resilient water future. Our draft WRMP includes the target to reduce daily household use to 109 litres per person by 2040. This aligns with the regional plan and is more ambitious than government's target of 110 litres by 2050.

We have a more stretching ambition to reduce average use to 100 litres per day by 2040 and are developing plans to achieve this. However, changes to working patterns and household demand have made this more challenging to deliver. This is why it is not part of our draft WRMP.

Water use today (2021/22): Household customers = 134 litres per person per day

Water use by 2040: Household customers = 109 litres per person per day

How could we do it?

We'll:

- replace customers' meters with smart meters that will send us near real-time data on how much water is being used
- use this to target our support including providing home visits, help and advice and installing water saving devices at their properties
- run public campaigns to encourage water efficiency – including working with the education sector
- introduce innovative tariffs, subject to customer acceptability, to incentivise water efficiency and work with local communities to encourage savings across local areas
- trial innovative solutions to reduce water usage in the home and in gardens
- work with government, policy makers and other stakeholders to promote the adoption of more water efficient policies and standards.

Do you support us achieving our WRMP target of reducing average personal daily use to 109 litres by 2040 or should we retain our more ambitious target of 100 litres per person per day by 2040?

The role of Government in reducing demand for water

Achieving our target to lower water use relies on the government introducing mandatory labelling on products that use water by 2024. This will help customers choose products that use less water.

The draft best value regional plan identified other measures that the government could take to help consumers reduce their water use:

- Minimum standards for devices that use water by 2045
- Amendments to building regulations for new homes and retrofits to deliver more water efficient housing by 2060.

Together, these measures could lower water use and offset investment in new resources across the region. If they were introduced earlier, they could help customers reduce their water use more quickly and at a lower cost.

Do you support additional proposed government interventions and the timing of their introduction?

Our draft plan for the next 15 years relies heavily on measures that reduce demand for water. The water savings they deliver must be sustained. We will keep this under review. If they do not deliver the savings needed we may need to develop new water sources sooner than set out in our plan.

Temporary water restrictions

Our plan includes the use of temporary restrictions to reduce water use during droughts, in line with our Drought Plan (see page 24). These restrictions typically reduce demand by 6% across our supply area. These measures include:

- Temporary Use Bans (TUBs) which restrict certain household activities such as using a hosepipe or sprinkler to wash your car or water your garden
- Non-Essential Use Bans (NEUBs) that reduce water use by businesses by restricting activities such as watering plants and cleaning windows.

If we were to stop using these measures, we would need to find an additional 20 million litres of water per day which could require the development of more new water sources.

Our plan continues to rely upon temporary restrictions on water use to help lower demand during droughts to avoid further investment in new supplies. Do you agree with our approach to continue using temporary water restrictions during droughts?

New water sources to provide resilient and sustainable supplies

WRSE's draft regional plan has identified schemes we could need to develop in the future.

These are typically in areas where we need to reduce the amount we take from the environment to protect the environment and reducing demand alone will not make up the shortfall.

Our adaptive planning approach identifies 'no regrets' schemes we predict are needed in all future scenarios. It also identifies which schemes could be needed under different scenarios further into the future.

Hampshire and the Isle of Wight

We need a new source of water to meet the supply deficit in Hampshire and to deliver wider environmental objectives. Our draft best value plan includes an option to transfer 90 million litres of water a day from Havant Thicket reservoir to the Southampton area, which is consistent with both the SRO we are progressing and WRSE's draft regional plan.

As part of the SRO development, we also identified the need for a water recycling plant to supplement supplies into the reservoir to meet the needs of customers and the environment as part of a regional solution.

In summer 2022, we consulted on our proposals for this SRO. This is based on the needs and challenges we identified in our WRMP19. We will consult on this option in more detail in summer 2023. We are also ensuring this scheme can meet the longer-term regional needs WRSE outlines.

Until a new resource is built, we may need to continue using drought orders and drought permits to help secure supplies during droughts. We are progressing the SRO alongside our WRMP to reduce the need for these measures as quickly as we can.

We may also need to develop other new sources depending on the future we face. We may also need to abstract water from the River Test when flows are high to supplement the underground aquifer.

Additionally, we are investigating a strategic pipeline which could transfer up to 120 million litres per day from Thames Water. This depends on new sources being developed in Thames Water's area, all of which are being considered through the SRO process.

One of the new sources in Thames Water's area is the South East Strategic Reservoir, or SESRO. We've based our best value plan on WRSE's regional plan which includes an option for SESRO at 100Mm3, which would enable the strategic transfer into Hampshire. If the size and timing of SESRO changed it would impact our wider plans. For example, a larger reservoir could mean we need a smaller water recycling plant supplementing Havant Thicket reservoir. However, if SESRO was smaller or delayed, we may need to invest in alternative sources such as desalination or water recycling elsewhere in Hampshire.

A new strategic reservoir is an integral part of the regional best value plan for the South East. Do you have any comments on the size of the new reservoir?

Does your position change if the size of that reservoir (which will supply the transfer into Hampshire) impacts on the size of water recycling plant needed at Havant Thicket? (See section seven in our technical document for more information)

Hampshire and the Isle of Wight

West Sussex and Brighton and Hove

We need to develop new sources of water to secure water supplies for customers and the environment across our central supply area, covering West Sussex and Brighton and Hove.

We are developing a water recycling scheme near Littlehampton, which will transfer water to the Pulborough area.

A new reservoir close to the village of Blackstone, near Henfield in West Sussex would store water from the nearby River Adur to supply parts of Sussex.

We've previously identified the need for a new source of water on the Sussex coast before 2030. The options we're considering including the development of a groundwater source and a desalination scheme.

Depending on which of the future scenarios we are in, we may need to introduce desalination near the tidal River Arun.

Kent and East Sussex

The first option likely to be needed in Kent is a water recycling scheme on the River Medway. This would support our existing abstraction on the river. In some futures, we could raise the level of Bewl Water reservoir slightly so it can store more water after 2040.

Depending on the challenges we face in the future, we've identified the need for several desalination plants, and additional water recycling schemes. This includes desalination plants on the Isle of Sheppey, in East Thanet and on the Thames Estuary providing between 8 million and 40 million litres a day by 2050.

In the future, we may need to increase how much water we recycle from our plant on the River Medway. We may also need a recycling scheme in Tunbridge Wells, as well as one near Hastings which would be used to supplement Darwell reservoir.

In the short-term, we aim to work with a large industrial water user in Kent to provide them with recycled wastewater and enable us to use their existing groundwater sources to supply customers.

Our strategy includes a mix of new water sources that together will provide resilient and sustainable supplies for the future and address the challenges we face in each of our supply areas.

Do you support our strategy to develop new pipelines that will transfer water into our supply area, that is made available through the development of new strategic water sources in other water companies' supply areas?

Do you agree that water recycling has a role to play in securing water supplies for the future?

Our plan has shown we could need a desalination plant in Sussex by 2030 and that more could be needed in the future if we experience high population growth, and we need to reduce how much water we take from sensitive sources. Do you think we should use desalination to provide additional water supplies?

Our plan has identified the need for a new reservoir to store water in West Sussex. Do you think we should investigate this further to establish whether it could provide a new source for the area?

Do you think we should look at water recycling options where water is stored in reservoirs, lakes or other waterbodies as well as those where it is released back into nearby rivers and abstracted again?

Do you have any additional comments on any of the schemes we have proposed in our draft plan?

A network that can move water around the region

We have a network of pipelines that move water to where it's needed most. This includes within and between our water resources zones – and with our neighbouring companies.

Working with other water companies, we will build new pipelines to transfer water across the South East. This will help increase our region's resilience, and the resilience of our own supplies.

In the next few years, we will improve our ability to move water around Hampshire. This includes a new 21 million litres per day transfer when Havant Thicket reservoir is completed by 2030. We'll also continue improving how we move water between our water resource zones.

Longer term, we could transfer up to 120 million litres per day from Thames Water into Hampshire. This option depends on new sources being available in Thames Water's area. Additionally, we could build a new transfer from Havant Thicket reservoir to Sussex.

We already share water with our neighbouring companies, and these transfers are a crucial part of our collective resilience. We'll continue working with other water companies, including SES Water and South East Water, to build on our existing connections and develop new ones where needed.

Do you agree that we should develop our pipeline network so we can move more water between our supply areas and share supplies with our neighbouring water companies?

Catchment and nature-based solutions

Working with nature by using catchment and nature-based schemes will protect and improve the environment we rely upon.

This will help us secure sustainable water supplies for the future. It will also deliver wider benefits such as increasing biodiversity and lowering carbon emissions.

We want to improve the environment so it can better adapt to the challenges ahead. This is supported by our customers who value the environment more than ever before. Our 'Catchment First' programme is maximising opportunities to collaboratively deliver long-term environmental improvements. Our aim is to take a twin-track approach where we use traditional engineering schemes where needed to achieve compliance. But, where we can, reduce our reliance on them by increasing our use of catchment and nature based solutions.

Achieving sustainable abstractions

Do you support our ambition to proactively use catchment and nature-based solutions where we can to help improve the quality of the water sources we rely upon so we can abstract water sustainably and deliver wider environmental benefits?

We will continue investigating the impact our abstractions have on the environment. Where we can, we will deliver schemes that improve the water bodies we rely upon, so we don't need to make as significant reductions to our abstractions. The amount of water we do abstract will be sustainable for the future.

Reducing nitrate levels in groundwater

Nitrate pollution will impact both the quality and quantity of our groundwater sources. By working with farmers and other land users we will take action to protect 42 of our groundwater sources and make them more resilient.

Improving the resilience of our surface water sources

Where we abstract from rivers and streams, we'll work with partners to understand what factors could impact on the quality of our raw water sources. We'll take action to mitigate them while also delivering wider environment benefits such as increasing natural capital and reducing flooding.

Do you think that others who benefit from a healthy water environment should contribute to the cost of delivering these solutions?

Do you or your organisation have similar work planned in our catchments? Do you have any views on how best we can co-ordinate this work so we achieve the most benefits?

How we'll provide your water

Our strategy to supply your water includes a mix of options to increase supplies and reduce demand.

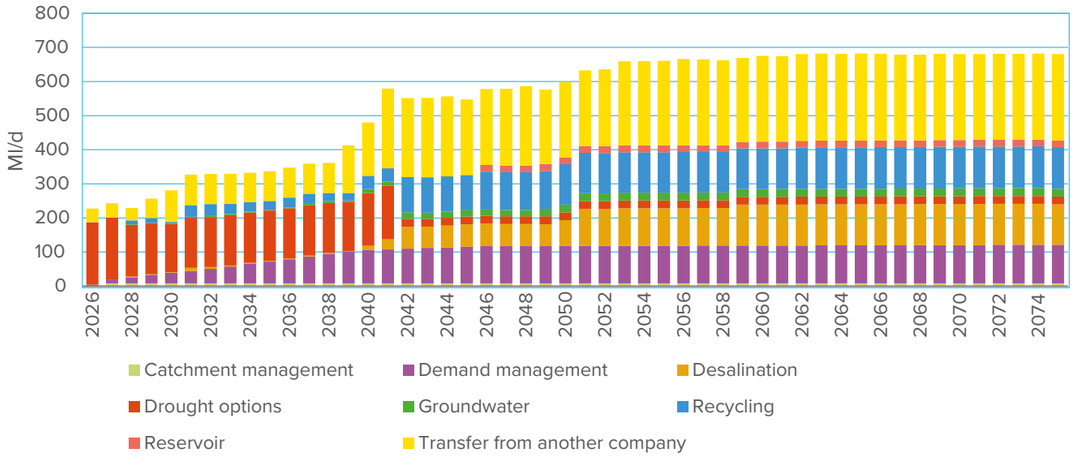
Between 2025–35:

- demand management measures including leakage reduction and helping people use less water make up around a third of the water we need
- drought orders and permits that allow us to continue abstracting water during a drought contribute over a third of the water, while we develop new supplies
- we'll introduce water recycling schemes in Havant, Littlehampton, Sandown and on the River Medway
- we'll transfer more water from Portsmouth Water and possibly from SES Water and South East Water
- catchment management schemes will help improve the quality and resilience of our water sources.
- we might introduce desalination on the Sussex coast.

After 2035:

- we stop relying on drought orders and permits that allow us to continue abstracting water during dry weather
- demand management continues to play an important role and we will maintain lower levels of leakage and water use
- water recycling and transfers from other companies contribute around two thirds of the additional water we need, this includes a large transfer from Thames Water which is dependent on a major new source of water being developed
- we build a new reservoir in West Sussex
- desalination, improvements to groundwater storage and reservoirs provide the rest.

The graph below shows the mix of solutions we could use to maintain your water supplies in the future.



Our draft WRMP includes options that will reduce demand and a mix of different schemes to produce extra water supplies. Do you think our plan strikes the right balance between demand and supply solutions?

The costs and carbon footprint of our best value plan

As part of WRSE, we've developed a best value plan to secure resilient and sustainable water supplies for the future. This means the investments we're proposing have been chosen because they will deliver wider benefits for customers, businesses and the environment.

They will help protect and improve the environment, support biodiversity and natural capital gains and increase our resilience to more extreme weather events. We have also considered customers' preferences for different types of option.

This will mean our supplies will be more reliable, and more water will be left in our rivers. It also means we are less likely to need to introduce emergency water restrictions, such as standpipes in the street, if a severe drought occurs in the future.

We are committed to achieving net zero operational carbon emissions by 2030. So, when developing the options in our plan we considered the carbon impact of all of them to make sure we can accomplish this.

The table below shows the total cost of our plan over our next three five-year investment periods, known as AMPs. It also shows how the average impact on bills at the end of each AMP, compared to bills in 2019/20.

Next year, we'll consult on our Long Term Delivery Strategy as we finalise our business plan - which will include the costs and benefits of all our activities. We'll submit this to our regulator in October 2023, who then determines the amount of investment we can make.

We're committed to delivering our plan as efficiently as possible - providing best value for our customers and the environment and securing Water for Life. You can read more about the costs of our plans and the possible impacts on customers' bills in section seven of our technical report, available on our website: **southernwater.co.uk/wrmp**.

Total cost of plan over our next three investment periods

	AMP 8 (2025 - 30)	AMP9 (2030 - 35)	AMP10 (2035 - 40)
Total cost*	£1,529m	£561m	£2,064m
Average increase from customers' bills in 19/20	£84.57	£110.91	£178.14

Water strategy for 2025–35

This map shows how we could provide resilient and sustainable water supplies between 2025 and 2030.

Key

- Less than five million litres of water each day.
- Between five and 50 million litres of water each day.
- More than 50 million litres of water each day.
- Reduce demand for water
- Drought action
- New sources of water and transfers
- Catchment or nature-based scheme

Hampshire and the Isle of Wight

1. Reduce leaks
2. Help customers use less water
3. Apply for a drought order on the River Test to continue abstracting water during dry weather
4. Receive up to 90 million litres of water from Portsmouth Water through a new pipeline
5. Build new pipelines so we can move water around our Hampshire area
6. Catchment schemes to address nitrates and pesticides and improve the resilience of our water sources
7. Recycle water from our Sandown site
8. Develop groundwater sources near Newbury, Romsey and Newchurch
9. Recycle water at Budds Farm wastewater treatment works and store it in Havant Thicket reservoir before transferring it through a new pipeline to our Otterbourne water supply works for treatment
10. Upgrade two water supply works in Hampshire to enable us to treat more water

West Sussex and Brighton and Hove

11. Reduce leaks
12. Help customers use less water
13. Recycle water from our Littlehampton wastewater treatment works and transfer it via the River Rother to our water supply works near Pulborough
14. Apply for drought orders and permits on the River Rother to continue abstracting water during dry weather
15. Apply for a drought permit on a groundwater source near Worthing to continue abstracting water during dry weather
16. Catchment schemes to address nitrates and pesticides and improve the resilience of our water sources
17. Build a desalination plant (or alternative source) on the Sussex coast
18. Import water from Portsmouth Water, SES Water and South East Water

East Sussex and Kent

19. Reduce leaks
20. Help customers use less water
21. Apply for a drought permit/order on the River Medway to continue abstracting water during dry weather
22. Catchment schemes to address nitrates and pesticides and improve the resilience of our water sources
23. Recycle water from a water recycling plant near the River Medway and release it into a storage reservoir near our Rochester supply works
24. Work with a large industrial water user to provide them with recycled wastewater and enable us to use their existing groundwater sources

Temporary Use Bans (TUBs) and Non Essential Use Bans (NEUBS) to be used during droughts in line with our Drought Plan.

Water strategy for 2035–50

This map shows how we could provide resilient and sustainable water supplies between 2035–50.

Hampshire and the Isle of Wight

1. Reduce leaks 💧💧
2. Help customers use less water 💧💧
3. Upgrade an existing water supply works so it can treat more water 💧💧
4. Take water from the River Test when flows are high in the winter and use it to supplement our underground water supplies 💧💧
5. Make improvements to an existing groundwater source on the Isle of Wight 💧
6. Catchment schemes to address nitrates and pesticides and improve the resilience of our water sources
7. Receive up to 120 million litres a day from Thames Water 💧💧💧

Temporary Use Bans (TUBs) and Non Essential Use Bans (NEUBS) to be used during droughts in line with our Drought Plan.

West Sussex and Brighton and Hove

8. Reduce leaks 💧💧
9. Help customers use less water 💧💧
10. Trade licences with farmers and support them to develop additional on-site storage to better use the water available during the winter 💧
11. Apply for a drought permit on a groundwater source near Arundel to continue abstracting during dry weather 💧
12. Build a new reservoir in Sussex to store water from the River Adur 💧💧
13. Catchment schemes to address nitrates and pesticides and improve the resilience of our water sources
14. Import more water from Portsmouth Water to near Pulborough and upgrade our treatment works to supply more water 💧💧💧
15. Develop a groundwater source near Petworth 💧

East Sussex and Kent

16. Recycle water near Hastings and store it in Darwell reservoir before treating it at a nearby water supply works 💧💧
17. Reduce leaks 💧💧
18. Help customers use less water 💧💧
19. Improve an existing groundwater source near Gravesend 💧
20. Catchment schemes to address nitrates and pesticides and improve the resilience of our water sources
21. Desalination plants on the Thames Estuary, Thanet coast and the Isle of Sheppey 💧💧💧
22. Increase the size of Bewl Water reservoir 💧

Water strategy for 2050–75

This map shows how we could provide resilient and sustainable water supplies between 2050–75.

Temporary Use Bans (TUBs) and Non Essential Use Bans (NEUBS) to be used during droughts in line with our Drought Plan.

Hampshire and the Isle of Wight

1. Reduce leaks
2. Help customers to maintain a sustainable level of water use
3. Recycle water from our wastewater treatment works near Woolston
4. Ongoing work to use catchment management and nature-based solutions to improve the environment

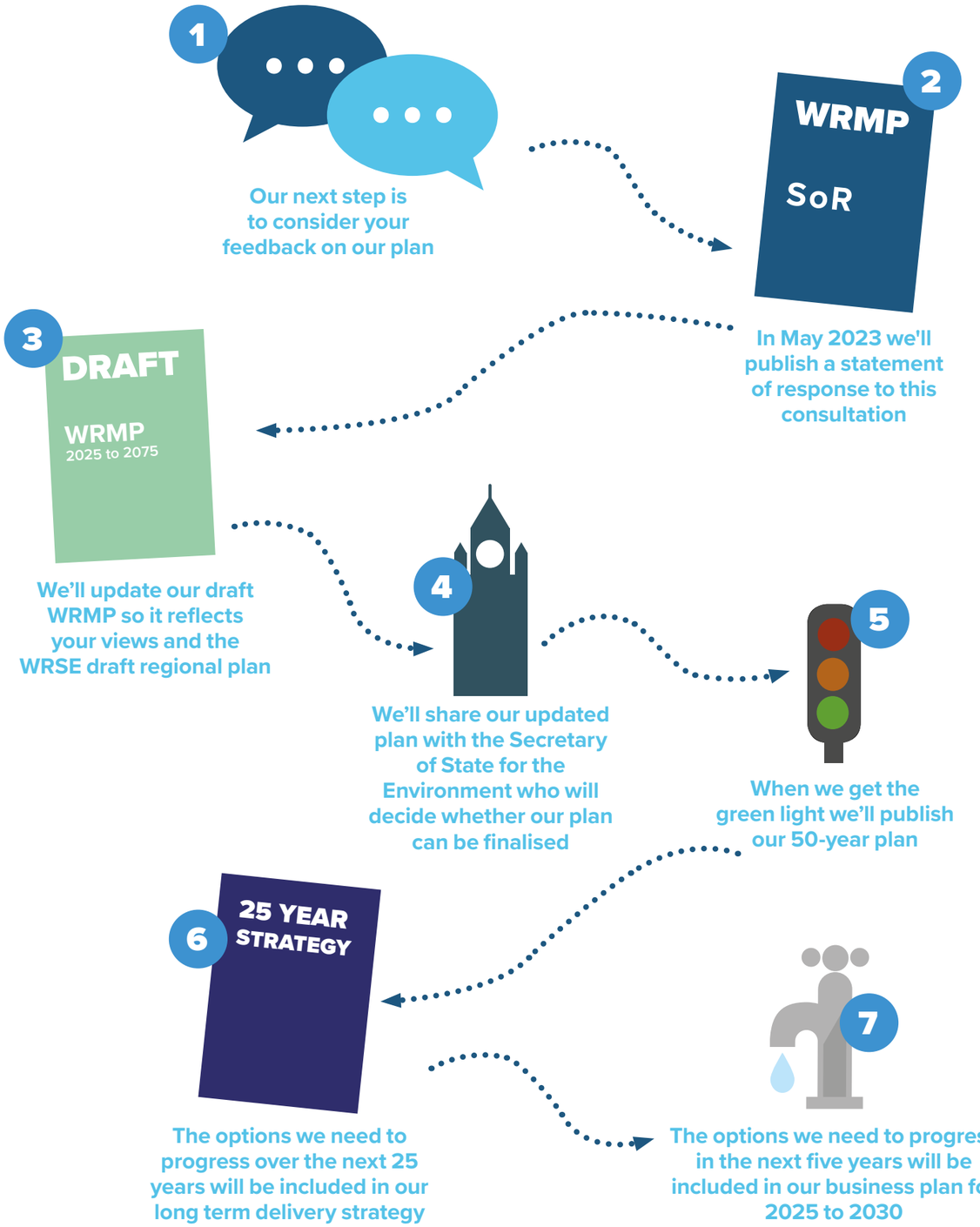
West Sussex and Brighton and Hove

5. Reduce leaks
6. Help customers to maintain a sustainable level of water use
7. Recycle water near Horsham and transfer it through a new pipeline to an existing reservoir near Pulborough before it is treated and supplied to customers
8. Ongoing work to use catchment management and nature-based solutions to improve the environment
9. Build a desalination plant on the tidal River Arun

East Sussex and Kent

10. Reduce leaks
11. Help customers to maintain a sustainable level of water use
12. Ongoing work to use catchment management and nature based solutions to improve the environment

What happens next?



How you can respond to our consultation

There are lots of ways you can have your say

1. Take part in our online survey at **southernwater.co.uk/HaveYourSay**.
2. Email **Defra** at **water.resources@defra.gov.uk**, putting Southern Water draft water resources management plan in the subject line, and copying in **wrmp@southernwater.co.uk**.
3. Print out our survey or write a response and send it to Defra at:
   Water Resources Management Plan Consultation (Southern Water)
   Water Services
   Department for Environment, Food and Rural Affairs
   Seacole Ground Floor
   2 Marsham Street
   London
   SW1 4DF.

If you have any issues accessing our consultation or have any questions relating to it please contact us at **wrmp@southernwater.co.uk**.

You can read the technical documents that accompany this consultation at **southernwater.co.uk/wrmp**.

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from Southern Water

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