Right deal · Right now ·

Our strategic priorities

Water quality and resilience

South West Water

Bournemouth Water

Isles of Scilly Water

BRISTOL WATER

Contents

ON OUR FRONT COVER...

Raluca Shapley
Catchment Analyst

Raluca works in the Engineering Programme Delivery Team at South West Water, analysing water catchment areas. Raluca is proud to be part of the work of SWW, safeguarding the supply of water, which she sees is a precious resource that we must take care of, for the sake of our children; and the future of our planet.

Why high quality and resilient water supplies is our number one priority

Our water quality and water resilience plans are the most ambitious water resources and water quality plans in the Greater South West in decades. Their focus includes:

We are trusted to provide a clean, safe and reliable water supply to c3.5million people across Bristol, Bournemouth, Devon, Cornwall, the Isles of Scilly and parts of Dorset. We also have a responsibility to protect the environment from which we take raw water to be treated and put into supply.

The health of our environment is intricately linked to the state of our water supply, encompassing both its quantity and quality. Our mission is to strike the right balance between the water we utilise for our community's needs and the amount we preserve in our rivers.

Our journey towards achieving world-class water management commences with safeguarding the rivers that serve as vital sources of drinking water. Rivers are the lifeblood of our region and the foundation of the services we provide. We rely upon rivers for 90% of our water supplies and 10% from groundwater boreholes. The cornerstone of exceptional drinking water quality lies in the pristine condition of these rivers.

That's why our strategy revolves around sustaining our award-winning programs in agricultural, peatland, and forestry land management, along with investments in restoration initiatives. These sustainable catchment solutions prevent harmful runoff from roads, fields, and farmlands, protecting our rivers and reservoirs from nutrient and contaminant pollution. Focusing on natural environmental preservation also allows us to circumvent costly upgrades to water treatment facilities, thereby keeping bills affordable.

Our work does not stop at water quality; it extends to safeguarding the natural flow of our rivers. During summer months, we employ our reservoirs to augment river flows, ensuring the protection of aquatic wildlife. The large majority of our 32 reservoirs we have across the regions are used to feed the and protect the river networks. The reliance upon the river network is as a result of the geology of the region – being a largely granite peninsula there are few sustainable boreholes.

We understand the importance of consistently providing **clean, safe drinking water** to our 3.5 million customers and the 10 million visitors we welcome each year

The knock-on impacts of the Covid pandemic for our region acutely demonstrated the challenges we have in this area. During the pandemic two things happened: we saw significant change in population distribution and the pattern of demand, particularly in Devon and Cornwall. This included an increase in population equivalent to between a quarter and a half of the expected 30 year increase to 2050.

This was coupled with the hottest year on record – with a drought that has extended for well over a year. The natural environment suffered through the drought and reservoirs were drained to support the river network. Supplies were continuous to our communities; we were agile and worked quickly to re-route and manage the resources situation across our regions. We extended water efficiency programmes, and so far we have given away 240,000 free water efficiency devices alongside trialling a first in the sector Stop the Drop water efficiency schemes.

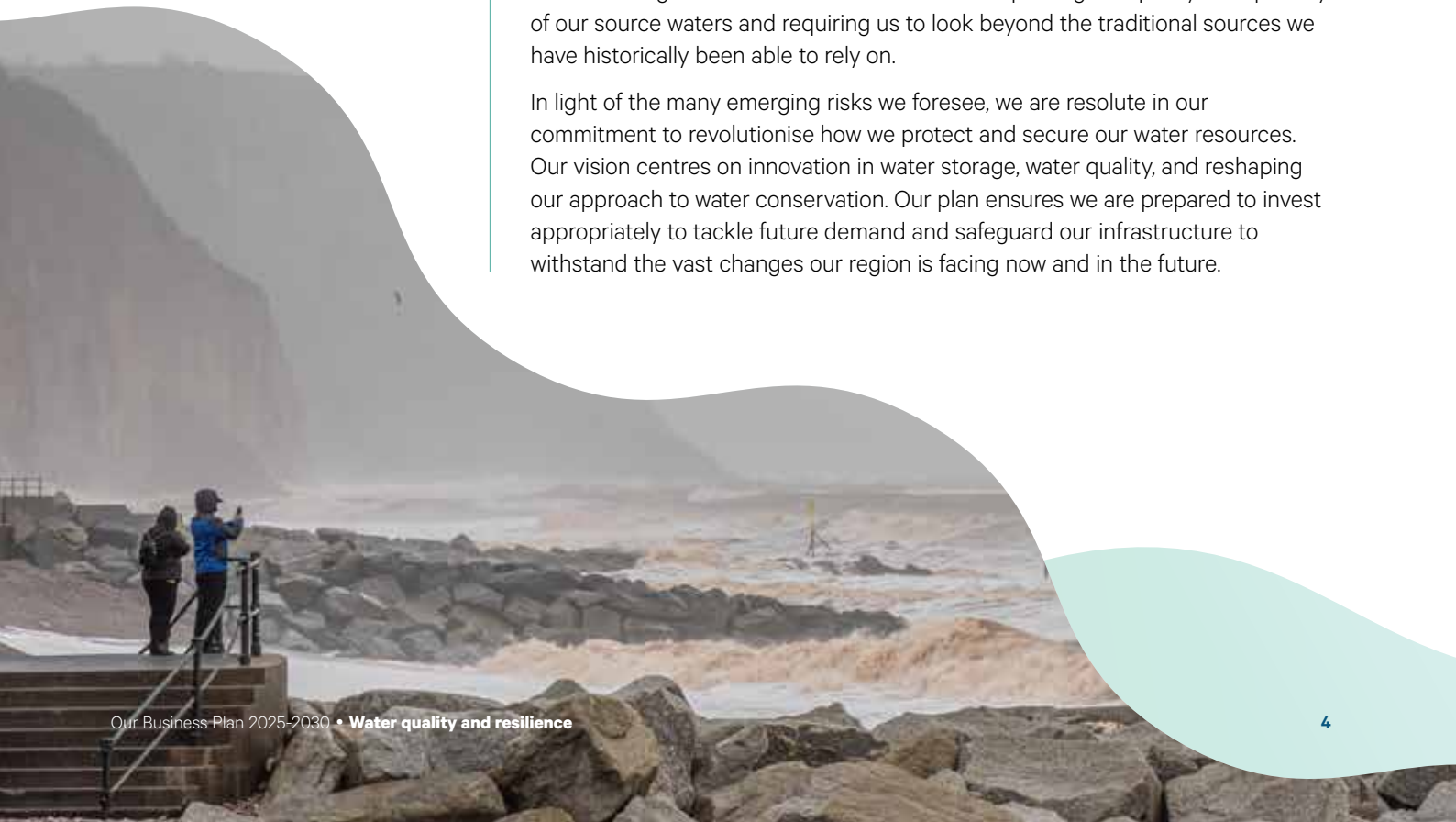
But we learnt lessons: in short, we saw the need to secure a more diversified portfolio of water resources and increase our efforts on the demand side and with water efficiency initiatives.

The pandemic, coupled with the drought, provides a glimpse of what might become commonplace in the future, as the likelihood of hotter and drier summers, as well as more frequent heatwaves, threatens our water resources and access to clean drinking water.

All of the above means that, in future, we must serve a growing population from reduced available abstraction, requiring both demand side and supply side investment to ensure resilient water supplies are maintained. In our Water Resilience Plan we achieve this through a combination of demand reduction investment and additional supply schemes.

Despite the investments and progress we have made we recognise that we must always look forward and prepare for new and emerging risks. The impacts of climate change on river and reservoir levels is impacting the quality and quantity of our source waters and requiring us to look beyond the traditional sources we have historically been able to rely on.

In light of the many emerging risks we foresee, we are resolute in our commitment to revolutionise how we protect and secure our water resources. Our vision centres on innovation in water storage, water quality, and reshaping our approach to water conservation. Our plan ensures we are prepared to invest appropriately to tackle future demand and safeguard our infrastructure to withstand the vast changes our region is facing now and in the future.



The key dimensions of our ambitious plans

Our water quality and water resilience plans are the most ambitious water resources and water quality plans in the Greater South West in decades. Their focus includes:

- Increased investment in water resources to meet the targets set by the Environment Act for abstraction reduction and securing future resources, bolstering our resilience against future droughts and drawing lessons from the 2022 drought.
- Development of a climate-resilient portfolio of water resources, ensuring environmental protection and meeting the water needs of homes and businesses in the face of climate change and population growth. This includes diversifying our raw water resources and exploring climate-independent sources and water reuse schemes.
- By 2025, we will have developed new resources and sustainable abstractions that are equivalent to supporting 30% of the needs in Devon and 45% of the needs in Cornwall. In the plan to 2030 we will commence investment to grow this by a further 6% in Cornwall and 29% in the part of Devon serviced by Wimbleball (by 2035).
- We are also investing in water reuse at Poole Harbour which will support a further increase in availability of 13% of Bournemouth Water's requirements.
- We are also providing additional resilience by enhancing our inter-regional water grid to enable us, during a drought and other resilience challenges, to move 60% more water between our South West Water supply zones.
- Our plan involves the construction of new strategic reservoirs in the region, beginning with Cheddar 2 in the Bristol area. We will also repurpose naturalised quarries in Cornwall to enhance regional resilience.
- A continuous investment programme for our water treatment facilities, ensuring they can address the challenges of today, with one third of the treatment works being targeted for upgrades and rebuilds
- Furthermore, we are committed to reducing water leakage and promoting efficient water use. Supporting a thriving economy, water efficiency not only benefits the environment but also enables households and businesses to save money. We will encourage local rainwater storage and assist customers in reducing their water consumption. We understand the importance of leakage reduction to our customers and aim to further reduce it by 17% in South West Water/Bournemouth and 8% in Bristol, building on our prior achievements.
- We need to do all we can to save water. We have reduced leakage levels from our networks. By 2025, the rate of leakage across all networks will be c11% of what we produce for drinking water, with an extra 4% of leaks occurring on customers networks. By 2030 we will reduce this to 9% and 4%.
- Additionally, we will roll out a comprehensive smart metering program to enable us to pinpoint water wastage. This, combined with facilitiating new innovative tariffs for fairer charges, is the first step to customer transparency of usage and understanding of usage drivers as well as supporting customers to actively manage their water budgets

60%
more water moves between our South West Water supply zones during a drought

50%
of treatment works are being targeted for upgrades and re builds.

Key highlights – our water quality & water resilience plans

99.97%
drinking water samples meeting all stringent tests set

3 new reservoirs
in last 16 years

Zack Berry
Finance Apprentice

Zack is an apprentice in the Finance Team of South West Water. He is enjoying the experience of working on tasks that are new to him. Zack appreciates the family feel of the business and is looking forward to growing his skills and experience as the company grows.

We are investing today to protect the future prosperity of our regions

Our region depends on a safe and reliable supply of water for residents, businesses and visitor alike. At the same time the environmental health of our region is closely linked to the volume of water that we take and return to the environment. Our plans look to protect both water quantity and water quality, striking the right balance between the water abstracted for use by customers and the amount left in rivers.

Population across our region is growing each year and we expect that by 2050 there will be up to 400,000 more people living and working in our region. With a growing population and changing weather patterns, we need to develop climate independent sources of water – we must strike the right balance between supporting the natural environment and taking water for drinking water purposes and build a more diversified portfolio of raw water resources.

Our plans are the most ambitious in decades

Our plans are the most ambitious water resources and water quality plans across the Greater South West in decades. For example, our water resilience and water quality plans are the largest programme ever in Bristol. For the Isles of Scilly our investment plan also represents a significant increase in investment since we took on responsibility for public water supply on the islands in 2020.

It is these investments that support our strategy of acquiring water-only companies – once acquired, we make significant greater investment in water resilience and water quality in those areas. This is a strategic advantage for us: we take water quality seriously and we are heavily focused on water resilience.

Our Plan will support c.560 jobs and inject £639m income into the regional economy. We have kept costs to a minimum through targeted efficiency.

Our plans achieve equally for our customers and the environment

Our region depends on a safe and reliable supply of water for residents, businesses, and visitors alike. At the same time the environmental health of our region is closely linked to the level of water that we take and return to the environment. Our plans look to protect both water quantity and water quality, striking the right balance between the water abstracted for use by customers and the amount left in rivers.

There is more to do and our plans see us go further

We will protect rivers and in doing so protect drinking water sources. We will ensure our treatment processes and network delivers top quality drinking water. We will fix more leaks than ever, including leaks at customer properties. We will install smart meters to allow consumers to control their usage. And because we know the importance of preparing for the long term, we will continue to invest in new water resources, including working with our neighbours in Wessex Water to support the wider region for the benefit of all.

Our plans deal with emerging risks

We recognise that we must always look forward and prepare for new and emerging risks. Our plans do that.

By way of example our Water Resilience Plan seeks to address the risks posed by climate change, population growth and the current level of water abstractions on the sustainability of our regions' natural environment.

Our water quality plan seeks to:

prevent raw water deterioration caused by changes in source water quality, including more frequent environmental extremes due to climate change, from impacting our customers

Improve the level of service to customers by **reducing the annual number of taste, odour and appearance complaints** by around 1,000 to 1,500 by 2030

Address risks from current and future raw water deterioration and potential tightening of legislation with regards to emerging contaminants, such as forever chemicals

Combine our water quality enhancement with synergistic capital maintenance investment to get the **best value** for our customers

Improve the level of service for customers by **reducing our water quality risk** as measured by our drinking water safety plans and the DWI's Compliance Risk Index, which reduces the likelihood of boil water or do not drink notices for our customers

continue our **long term plan to replace lead pipes**, particularly focussing on customers that are unable to pay and opportunistic replacement alongside our network improvement plans

Improve the resilience of our system to improve metrics not directly linked to water quality, such as supply interruptions and unplanned outage.

Key outputs by 2030 – our water quality and water resilience plans

Water resilience

Developing 4 new water supply schemes equivalent to 70 million litres per day. This includes developing both the Mendips Quarry and Poole Harbour regional supply schemes and developing and commencing construction of the new Cheddar 2 reservoir. It is also in addition to the substantial new water resources currently being developed (Blackpool Pit, South Cornwall desalination plant etc)

Installing 5 new strategic interconnector schemes and one mains pipe, totalling 70km, plus upgrades to existing networks (increased pump capacity) to allow us to move water more flexibly between and around our regions and increasing the resilience of our network to drought and other reslience challenges

Over 50 million litres per day of reductions in licensed abstraction volumes from environmentally sensitive rivers and schemes underway to deliver the glidepath reaching 223 million litres per day across our longer term planning period

Reducing leakage by a further 19.3 million litres per day (being an 15% reduction from 2025 and 34% reduction from 2018)

850km of leakage driven mains replacement

Reducing household consumption by 14.6 million litres per day and business consumption by 3.3 million litres per day through water efficiency initiatives

Installing 500,000 new smart meters across our regions (to 2035) to enable us to pinpoint water wastage. This, combined with facilitating new innovative tariffs for fairer charges, is the first step to customer transparency of usage and understanding of usage drivers as well as supporting customers to actively manage their water budgets.

8% household Per Capita Consumption (PCC) reduction from 2025

3% reduction in business demand from 2025

Progressively addressing emerging risks including climate change, population growth and sustainability of river abstractions

Water quality

Ensuring world class drinking water that meets stringent water quality standards

Expanding our catchment management program to include 12,500 additional hectares of land for natural water filtration.

Reducing customer complaints about water quality by 43%

Continuing to improve water quality for everyone in Bournemouth through upgrades to treatment works.

Completing major upgrades at two of our larger treatment works in Bristol

Upgrading five treatment works in Devon and Cornwall for water quality and increasing treatment capacity at our strategic treatment works in Cornwall (Restormel) ensuring resilience against future population and tourism growth in our region alongside Rebuilding one of our treatment works in North Devon, with a programme that will see interventions in 50% of our treatment works.

Managing the risk of raw water deterioration through adaptive treatment at seven works

Replacing 122 km of cast iron mains as we move into phase five of our discolouration management strategy

Investment in R&D to improve our knowledge and understanding emerging contaminants e.g. PFAS/ Micro Plastics

Making serious headway against our ambition to be lead free by 2050 through the replacement of 40,000 lead pipes for our customers between 2020 and 2030.

What we have heard from customers and stakeholders

1 Clean, safe water supply

2 Prevent pollution

3 Protect bathing waters

4 Prevent sewer flooding

5 Boost nature & wildlife

6 Reduce leakage

7 Resilience to extreme weather

8 Protect rivers

9 Less reliance on storm overflows

10 Excellent customer service & responsiveness

Customer number one priority is

clean, safe water

3.5million
residents

Population grows up to
10million
in the summer

We're focused on delivering for the customer and communities that we serve. Listening carefully has helped us to develop plans for the region that will benefit communities now and in the future.

Customer's number one priority is to ensure the basic requirement of a clean, safe drinkable water supply is protected and maintained – as it was at PR14 and PR19. If nothing else, customers want their basic needs met – and should always receive clean and safe water when they need it.

The vast majority of customers tell us they are happy with what they currently receive and are not surprised that 99.97% of water quality meets the stringent standards. But we need to invest to ensure enough is invested to maintain and protect the element that is most important to them.

Despite positive views about water services today, the concerns about **water resources** and whether there will be enough water in the future are growing – 34% customers see the biggest risk of climate change is having hotter and drier summers that we will need to prepare for. Customers consider reservoirs to be a popular supply options, but it's not well understood that it's a tricky process to plan for and build reservoirs - or that we have been repurposing quarries over the past decade or so.

"I think water quality through river restoration is the best way forward."

Bristol Customer

94%
customers are happy with the way water looks and tastes

7 in 10
customers believe the water in their local environment is good

Find out more here

Long-term Drinking Water Quality

Customers are unaware of the large leakage reductions that we have made over the last twenty years – and still see this as a priority area. There is even less awareness that over a quarter of leakage is from their pipes and plumbing. Leakage is still seen as a waste of water and money – and a barrier to water efficiency messages working.

Resilient water supplies are a must for customers and stakeholders. Rather than rely on a single approach or solution customers want to see a portfolio of supply options in our water resource plans, with storage solutions and repurposing existing bodies of water considered to be the right solution to address future droughts.

What this means – acting on our customer preferences and looking forward

Not having enough water in the future is not only a threat to the customers we serve, but also to the environment and to the economy of the South West.

Our plans show that if we do nothing, there will be a gap of nearly 200 million litres per day by 2050. Whilst reducing demand is our primary course of action, this does not completely close the gap across all our supply zones. We must work in harmony with our catchments to secure resilient supplies into the future and to protect our lifestyles and the places that we love.

We also recognise that we need to continue to manage the risks to drinking water quality through from source to tap. We will focus on addressing issues in source waters and therefore allow us to promote the most sustainable level of treatment in the future. We plan to continue to innovate in our water treatment processes to provide the best possible performance and fit with our low carbon future. We also plan to continue our programme to tackle lead pipes on our network and in customers' homes and work places to reduce the small residual risk to public health.

Continuing to keep our water supply networks clean and clear will ensure our customers consistently receive high quality water whilst we also work to replace the oldest and highest risk parts of our networks

"We don't want hosepipe bans – unable to use water when it gets hot."

Cornwall customer

"Shouldn't we build reservoirs. Why not open another one if we get a lot of rainfall here?"

Cornwall customer

Working with the water cycle

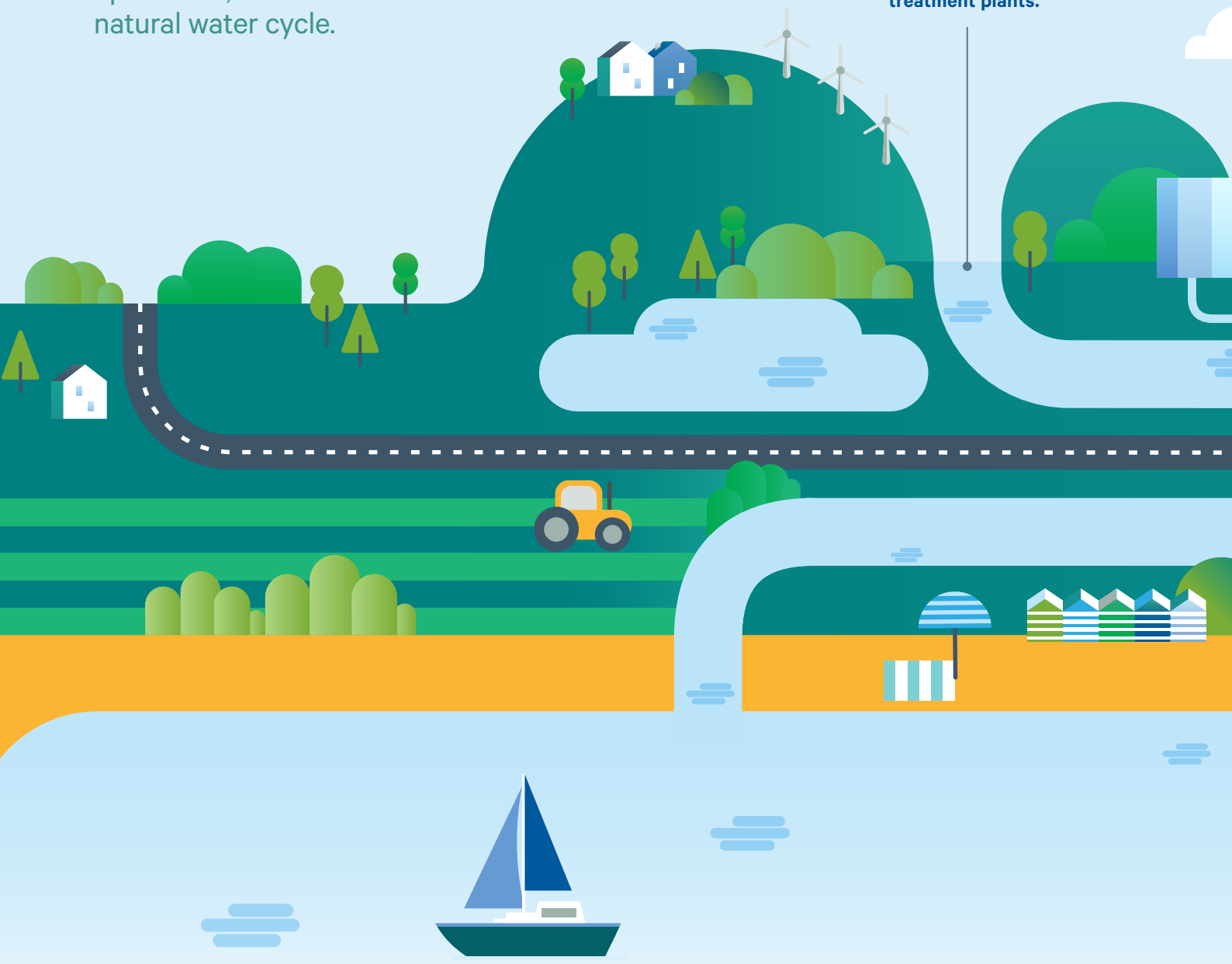
We are a large regionally-focused business – our operations are integral to delivering services and benefits to our customers, stakeholders, the environment and the wider economy.
We are dependent on the natural environment at all stages of operations, which mirror the natural water cycle.

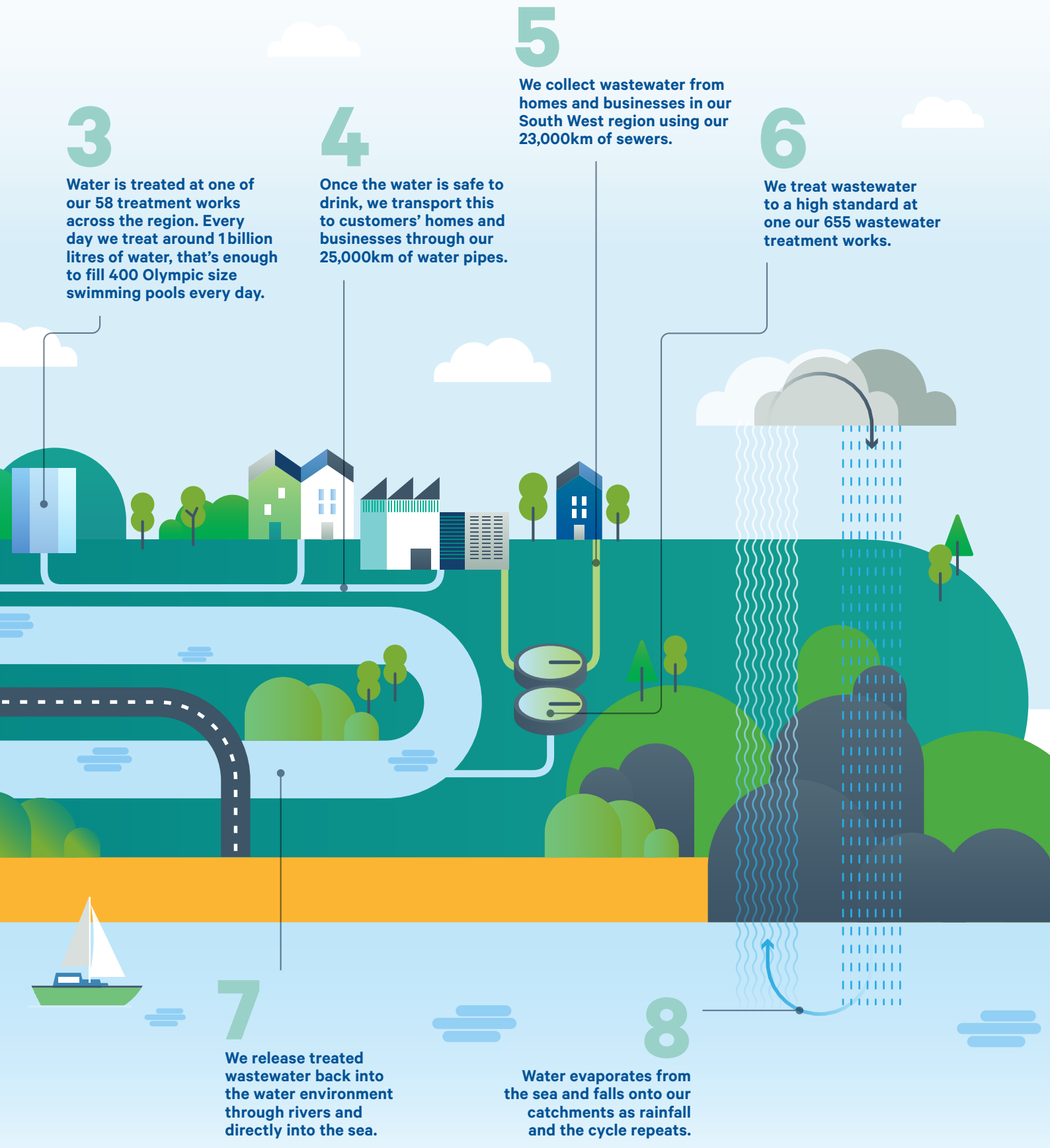
1

In our catchments we take water from rivers and groundwater sources which we store in 32 reservoirs. We also use desalination to supply customers in the Isles of Scilly.

2

Our operations play a vital part in maintaining the level of river flows – from the level of water we release from our reservoirs into rivers, to the level we abstract and take to our treatment plants.




3
Water is treated at one of our 58 treatment works across the region. Every day we treat around 1 billion litres of water, that's enough to fill 400 Olympic size swimming pools every day.
4
Once the water is safe to drink, we transport this to customers' homes and businesses through our 25,000km of water pipes.
5
We collect wastewater from homes and businesses in our South West region using our 23,000km of sewers.
6
We treat wastewater to a high standard at one our 655 wastewater treatment works.
7
We release treated wastewater back into the water environment through rivers and directly into the sea.
8
Water evaporates from the sea and falls onto our catchments as rainfall and the cycle repeats.

Part one:
Our water quality plan 2025-2030

Key highlights from our water quality plan 2025-2030

Our journey to delivering world class water starts with protecting rivers that are important sources of drinking water.

Rivers are the lifeblood of our region and of the services that we provide. Excellent drinking water quality starts with the quality of the water in the rivers, which is why our plans continue our award winning programme of agricultural, peatland and forestry land management and restoration investments. These sustainable catchment solutions prevent run off from roads, fields and farmland which can harm rivers and reservoirs with nutrients and contaminants.

Focusing on the natural environment also means we can avoid expensive upgrades to water treatments works and processes, this keeps bills more affordable.

Our work also protects the flows in rivers, with our reservoirs being used to boost flows in summer months to protect aquatic wildlife.

Today water quality has never been higher. 99.97% of water samples meet the most stringent of world quality standards.

A clean safe supply of water is our customers' number one priority and with our 3.5 million residents and 10 million visitors each using 140 litres of water a day on average, it is our number one priority to make sure every single drop is brilliantly clean and safe, whether it is used for drinking, preparing food, showering, bathing or washing.

Water quality in the UK is among the best in the world and customers have high regard and trust for our drinking water. Yet some customers do not consistently have high quality water. For example, some consumers still report changes in the appearance, taste and smell of their supplies due to cast iron mains or changes in the raw water quality. Some customers live in older houses that may have lead pipes that connect them to our network. We need to invest to address these issues.

Key water quality plan outputs by 2030

- 12,500 additional hectares of land included in our catchment management programme
- Reducing customer complaints about water quality by 43%
- Continuing to improve water quality for everyone in Bournemouth through upgrades to treatment works.
- Completing major upgrades at two of our larger treatment works in Bristol
- Upgrading five treatment works in Devon and Cornwall
- Rebuilding one of our treatment works in North Devon
- Managing the risk of raw water deterioration through adaptive treatment at seven works
- Replacing 122km of cast iron mains as we move into phase five of our discolouration management strategy
- Investment in R&D to improve our knowledge and understanding of emerging contaminants
- Making serious headway against our ambition to be lead free by 2050 through the replacement of 40,000 lead pipes for our customers from 2020 – 2030.

Our water quality journey so far

We are a water recycling system for our unique region and whilst the system is the culmination of generations of decisions and investments, over the last 30 years we have been modernising the Victorian system we inherited. This has led to tangible benefits, including world class water reliably supplied.

We're passionate about providing the best quality tap water to our customers and greater than 99.99% of drinking water quality samples meet all stringent tests – we achieve this year on year.

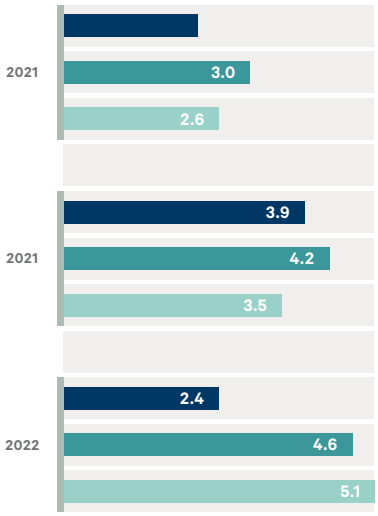
Our continued investment includes major upgrades to two of our largest Water Treatment Works: Alderney and Knapp Mill in the Bournemouth area. They will utilise the state-of-the-art technology first utilised in our new Mayflower Treatment Works in Plymouth, and significantly reduce water quality risks. Underpinning our commitment to drinking water quality is our drinking water transformation programme, focused on delivering consistent quality standards across all of our areas.

We have established a comprehensive water quality monitoring programme on the Isles of Scilly where water supplies have not benefitted from full application of Water Quality regulation until our adoption in 2018. We have risk assessed the supplies on each island and are delivering improvements before 2025. This investment will support our goal of providing a safe and reliable public drinking water supply. In AMP8 we will validate these investments and undertake further research to determine the most sustainable means of supplying drinking water on this unique archipelago.

Whilst drinking water quality is improving, we appreciate we have not always achieved our regulators high standards. In 2021, the DWI issued three improvement notices to address: The cleaning and inspection of drinking water storage and chlorine contact tanks, water quality monitoring, control, and investigations and enhanced resilience and maintenance.

In response to this, we quickly established a robust governance framework with dedicated delivery groups and a Transformation Committee chaired by the Group CEO. This framework has been effective in enabling us to demonstrate to the DWI that we are 'on-track' to meet our commitments.

99.97% drinking water samples meeting all stringent tests set



CRI Performance
2022 Industry figure is estimated pending DWI confirmation

South West & Bournemoth
Bristol
Industry average

Our investments to 2025

Two water treatment works substantially rebuilt with upgraded treatment processes – resilient to potential deterioration of river water quality

Replacement 6,000 – 7,000 lead supply pipes

New water treatment processes installed on the Isles of Scilly

Embedding our Quality First culture

2 Manganese removal schemes to improve discoloured water at Restormel (our largest WTWs) which supplies mid-Cornwall and St Cleer, which supplies East Cornwall along the Devon border.

2 schemes to improve the taste and smell of water at Littlehempston, which supplies South Devon and Stithians which supplies West Cornwall.

Water quality compliance (CRI)

The UK benefits from strong independent regulation and water quality performance is currently world leading with overall compliance with water quality standards consistently more than 99.97%. Recognising the need to consider future risks to water quality, the Drinking Water Inspectorate (DWI) have developed the compliance risk index (CRI). This intelligent, risk-based measure of water quality was introduced by the DWI in the AMP6 (2015-2020 period and incorporated as a common measure in company performance reporting by Ofwat in AMP7.

Part of the regulatory strategy for making this a comparative measure was to reduce risks to water quality performance across companies. In the first two years of AMP7 South West Water's CRI performance was closely aligned to the national CRI score which represents the water quality performance achieved across all monitoring in England and Wales. Performance in the South West and Bournemouth region has been improving relative to the wider industry and we are now among the best performing companies in the most recent reporting year of 2022.

Performance in our Bristol region has remained stable relative to the national CRI position. We are currently assessing the range of risks in the Bristol Region and are committed to making improvements to reduce risks.

Water quality contacts (appearance, taste and smell)

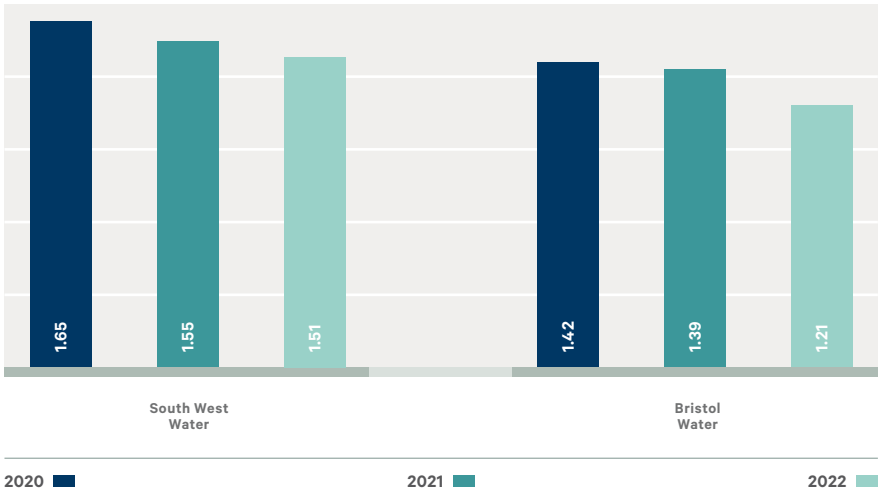
Customers have high expectations when it comes to the appearance, taste and smell of their drinking water, and we know that this is important in maintaining consumers' trust in the safety of our supplies. The acceptability of our supplies to consumers is an area our improvement plan is focussed on to ensure every customer can trust their drinking water quality and can enjoy tap water that looks and tastes great.

Our region has some unique challenges which we are working to overcome. The primary challenge we face is that we are almost exclusively reliant on water supplies that come from surface waters which are inherently more discoloured and variable than ground water sources which benefit from natural filtration (90% of our water comes from surface water which is three times higher than the national average).

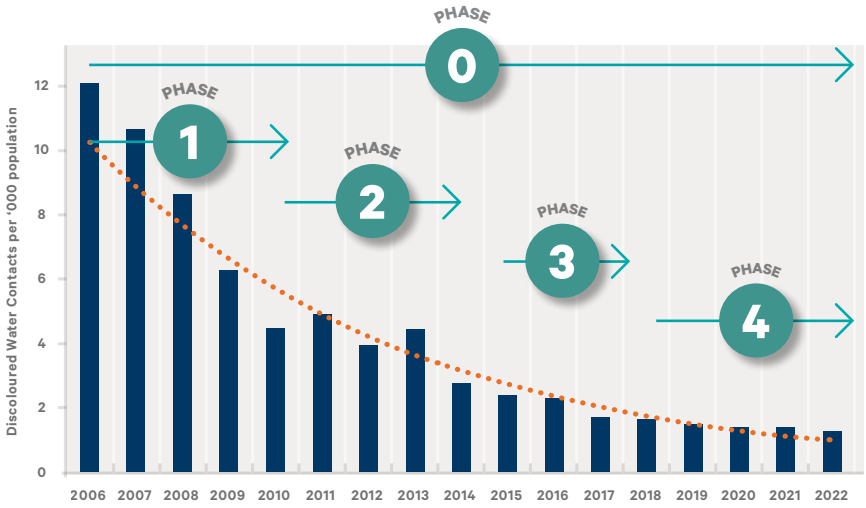
Therefore, natural colour, turbidity (suspended material) and taste and odour causing compounds have to be removed and we have to 'harden' South West supplies to reduce the corrosive impact of our naturally soft water on our pipes.

Investments over the last decade have resulted in an improvement in performance in this measure and we are entering phase five our discolouration management strategy.

Taste, smell & colour (contact per 1,000 population)



- **Continuing activity:** (the most important phase) Progressively upgrade our WTWs to treat more variable surface waters. By the end of AMP8 85% of our surface water treatment works will have enhanced treatment. The remaining 15%, which are lower risk, will have provisions for mobile treatment technologies so we can respond to raw water events if they occur. This phase improves the quality of water we supply into our network.
- **Phase 1:** The most high risk and problematic metallic water mains were removed or relined in 2005 – 2015. This has helped stop some 'brown' water contacts which were caused by the natural deterioration and corrosion of older metallic mains.
- **Phase 2:** Implementation of a new targeted flushing programme
- **Phase 3:** Using new technologies to keep customer more informed about events across the network that might cause discolouration, i.e., high flows from a burst mains in the area.
- **Phase 4:** Automated trunk main conditioning was established which very cleverly increases flows in our trunk mains on a routine basis to provide a background level of cleaning across our large mains.
- **Phase 5:** We are preparing to deliver a balanced programme of targeted metallic mains replacement and increased flushing.



The water quality challenges that we face

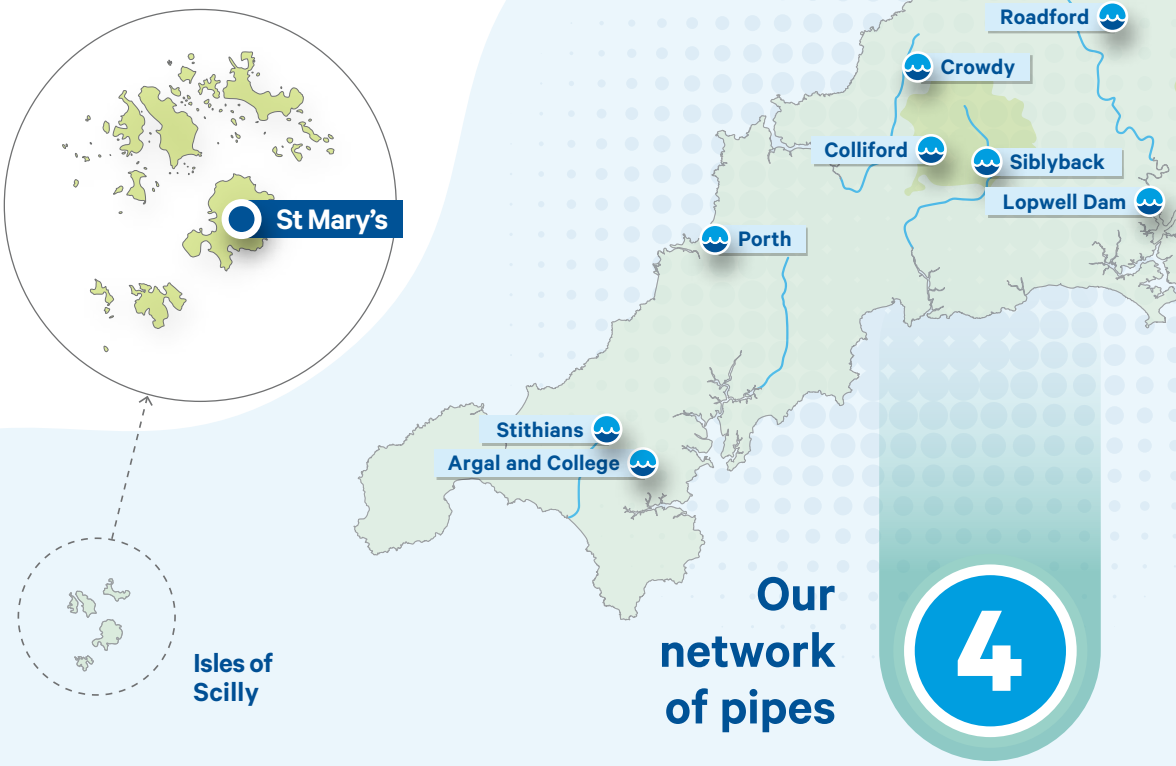
South West Water provides drinking water across the whole of the greater South West and trades under three names:

- **South West Water – for Devon, Cornwall and the Isles of Scilly**
- **Bournemouth Water**
- **Bristol Water**

Continuing to maintain and improve water quality across these different regions is key to the customers, communities and businesses we serve. Every day, we abstract, treat and distribute 870 million litres of water through our network of 58 water treatment works (WTW). In doing so, we understand the critical role we have as a provider of clean, safe drinking water that consumers can trust and the importance of our supplies always looking and tasting great.

As we invest for the future, we recognise that our region is set apart from the rest of the UK. We have already built strong relationships with farmers, land managers and environmental organisations and we work together to protect our water quality in the south west. We recognise that we are a custodian of the drinking water supplies and the water environment, and we'll need to work with others on a long term basis to resolve the challenges we face.

Our communities **5**



Our network of pipes **4**


Biosphere reserve
National parks
Reservoirs
Rivers
1
Quality of our source waters
Bristol
Barrow
Blagdon
Chew Valley
Cheddar
Wistlandpound
Wimbleball
Longham Lakes
Bournemouth
Meldon
Exeter
Fernworthy
Kennick, Tottiford & Trenchford
Venford
Burrator
Avon
Plymouth
2
Availability of our source waters
3
Our treatment facilities

1 Quality of our source waters

Across our region over 90% of our water is sourced from surface water sources such as rivers and reservoirs, with around 10% sourced from groundwater (underground aquifers).

Our reliance on surface water is three times greater than the industry average and this means that our water treatment works (WTWs) need to be resilience to changing weather patterns (more extremes of weather) that can affect rivers and reservoirs more immediately than where groundwater is available.

As well as the impacts of variable weather, such as storms which can lead to rapid changes in raw water quality in our river systems – drought conditions can also lead to poor water quality due low levels of in our reservoirs and rivers.

Furthermore, water quality is threatened from soil degradation due to intense rainfall/drought, intensified farming, microplastics, and other micro pollutants.

2 Availability of our source waters

A period of sustained dry weather, like the 2022 drought, can quickly reduce the levels in our reservoirs and the flows in our rivers.

We recognise our duty to protect our rivers during these dry periods as we work with the EA to improve the sustainability of our abstractions. Reducing our abstractions means we expect a gap of around 200 million litres per day between demand for water and sustainable supply – this is a quarter of the water we currently supply.

More specifically, the supply reduction due to licence capping (in response to climate change but more so the no deterioration policy) couple with demand increase due to hotter weather, population increases and increased use of other sectors e.g. food, will lead to an increased risk of disruptions to supplypollutants.

3 Our treatment facilities

We operate and maintain 58 water treatment works (WTWs) distributed across our region. This includes 29 in Devon and Cornwall, 5 Bournemouth, 16 Bristol and 8 on the Isles of Scilly. With the majority of our water sourced from rivers, we have a higher reliance on complex multi-barrier treatment facillites to prepare our drinking water compared to areas whose supplies are largely from groundwater sources where lesser levels of treatment are generally required.

As our water sources become more diverse and challenging, we need invest in more advanced pre-treatment to address the risks present in the untreated water. This makes our operations more energy and chemically intensive so we look to innovate new technology to minimise these impacts to ensure we deliver low carbon solutions and achieving our ambition of net zero emissions.

4

Our network of pipes

The regional topography is dominated by our national parks of Exmoor and Dartmoor and Bodmin Moor. Many of our source waters and treatment sites are located in these areas. The undulating nature of the topography is reflected in how we design and operate our supply network and successfully distribute water from our treatment facillities to our consumers.

Our 25,000km of pipes run beneath rural and urban areas connecting the main centres of population, as well as to our smaller rural communities via a mix of strategic trunk and smaller distribution mains.

Our region benefits from a high proportion of service reservoirs (where fully treated water is stored) and relies on a relatively high number of booster pumping stations due to the hilly nature of the region and the need to meet the large increase in demand during the tourist seasons. This long network combined with the predominance of surface water provide additional challenges in preventing discolouration and maintaining chlorine levels.

5

Our communities

Our population is set across a range of communities covering the Isles of Scilly, Cornwall, Devon, Bournemouth, Christchurch and Bristol. We provide water services to small island communities and remote coastal villages through to urban centres, such as Exeter, Plymouth and Bristol. Our population swells in the summer as we welcome over 10 million visitors, who are drawn to the beautiful coasts, rivers and lakes across the region.

Across our region we forecast a circa 15% increase in population by 2044/45. Combined with the impact of climate change, leading to more extreme droughts, and new environmental requirements there will be increased demand for water. Collectively these will lead to greater pressure on the available water resource in our area.

Our plan for top quality drinking water

94%
customers are happy with the way water looks and tastes

We understand the importance of consistently providing clean, safe drinking water to our 3.5 million customers and the 10 million visitors we welcome each year. We reduce risk by proactively identifying emerging investment needs and acting early to prevent impacts on our consumers and the risk of losing their confidence.

Water Quality risks are continually reviewed to determine what risks may affect our operation to ensure that we maintain excellent drinking water quality – we do this through our Drinking Water Safety Plans which are shared with the DWI.

By continuing to put quality first we will ensure our customers and visitors to our regions can enjoy our drinking water now and in the future. We have developed a strategy to 2050 to meet this ambition which will see us improve drinking water quality and reduce water quality risks from source to tap. A detailed view of the specific water quality risks and how they are managed is included in our Water Quality Strategy. It focuses on following key areas:

- Investment in new regions. Continued strategy of improving water quality for new regions to the group.
  - coupled with development of the Cheddar 2 reservoir, we will be continuing our roll out of new ceramic membrane technology investing in two new works in our Bristol area to achieve a step change in quality.
  - investing over £14.8m in water treatment on the Isles of Scilly to meet the water quality legislation following adoption of water supplies on the islands by South West Water
  - Reducing risks at source. Tackling contaminants at source through our well established catchment schemes as well as investing in our networks and treatment works. Building on our pioneering catchment schemes that naturally filter water – working in 80% of our catchments – preventing taste, odour and colour causing compounds as well as potentially harmful chemicals and micro-organisms form entering our sources waters.
- Investment in Bournemouth. Serving the whole of Bournemouth with new state of the art ceramic water treatment works
- Embarking on the largest investment in Bristol since privatisation:
- Water that is safe, looks smells and tastes great. Upgrading around 50% of the water treatment works across Devon and Cornwall between 2020 and 2030
- Zero lead. Irradicating lead from our and our customer's networks by 2050
- Replace aging network assets. Across all regions we are embarking on the largest network replacement investment for 10 years
- Understand future risks. Investigating through our academic partnerships a range of pollutants, including 'forever chemicals' found in the natural environment to understand their occurrence, significance and potential control measures.

Our culture and our people – Our Quality First culture compliments the asset investments we make by ensuring our people appreciate the vital service we provide and have the right training and support to effectively deliver our duties as a water supplier. Through this culture we ensure our teams are empowered to the do the right thing – always.

Our purpose of Bringing water to life and supporting the lives of people and places they love for generations to come is our guiding principle and why we are here. Supporting this, we have four core values – Trusted, Responsible, Collaborative and Progressive.

The quality of the water we serve is impacted by the quality of the raw water. Compounds in raw water can impact the taste, smell and colour of drinking water. Whilst these are not harmful, they do affect customer's trust and satisfaction in the product. We tackle this in two ways:

Working in our catchments to develop natural solutions to improve water quality – for example by re planting mosses that naturally filter water

Re building and improving our networks and water treatment works

The colour of water across Devon and Cornwall is affected by the three peatland moors that have been degraded over the last 200+ years. Over the last 15 years we have worked in our catchments to improve water flow and quality

In our Bournemouth area, the raw water quality is harder and therefore has a different set of challenges compared to our South West Water area, but has similar issues in some localised areas, including microbiological and algae issues. Our Isles of Scilly region also has unique geology that means the raw water is effected by naturally occurring radon, as well as saline intrusion and microbiological risks.

Alongside the catchment work, we have been investing in treatment works to ensure we remove harmful compounds and deliver top quality drinking water. By 2030 we will have

- Rebuilt two strategically important water treatment works with innovative ceramic membrane technology in our Bournemouth region, which supply around 85% of customers supplied by Bournemouth Water, and upgraded the treatment process at one other water treatment works
- The quality of water for Devon and Cornwall is sector leading (as measured by CRI) – and with the improvements made for Bournemouth – the focus for the period to 2030 will be
  - 2 strategic water treatment works rebuilds and upgrade of treatment processes at one site in Bristol
  - Upgraded all water treatment works on the Isles of Scilly
  - Upgraded 50% of works in Devon and Cornwall
- Tackling networks – replacement of 122 km of aging cast iron mains and 40,000 lead pipes
- Enhanced understanding to develop a long term strategy for forever chemicals (PFAS) and other emerging pollutants.

We have developed investment plans to address and mitigate all high and medium priority risks by 2030

Top quality drinking water

Reducing risks at source – Our plans for catchment management

Why is this important?

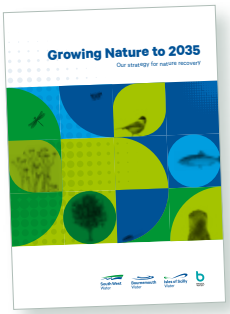
- Our ground water and surface water natural resources are now, more than ever, at an ever-increasing detrimental risk due to anthropogenic landscape changes and climate change.
- Both customers and stakeholders support us expanding our upstream thinking catchment management to deliver more innovative and collaborative nature-based solutions to maintain water quality and enhance the environment.
- From a customer value and environment point of view, the preferable option to improve drinking water quality is to prevent water quality risks at the source before they are abstracted into our treatment processes
- This crucial investment in natural capital also increases the flow of environmental goods and services (cleaner raw water, biodiversity etc.) from catchments to deliver improved business performance and support the customer priorities.

What are we going to do?

- Maintain industry leadership in catchment management and meet customer expectations to invest more in the environment
- Mitigation of catchment derived pollution risks at source through implementation of nature-based solutions in 18 new catchments across South West and Bournemouth Water and Bristol Water
- Deliver in partnership with local non-governmental organisations who provide increased match funding and potential for habitat improvements, resulting in further improved drinking water quality and quantity
- To deliver statutory schemes according to the WISER guidelines to meet legislative obligations
- Nature based solutions with multiple overlaps with drinking water quality, including:
- 33 Investigations – improving our understanding of water quality and environmental risks to support sound, evidence-based catchment strategies
- 26 Improvement schemes – to enhance the environment, improve water quality and biodiveristy, by educating catchment stakeholders and restoring habitats

By overlaying UST with the enabling works at our WTW's, which allow for the use of mobile treatment technologies if necessary, we hope to delay the investment in more permanent solutions which can be expensive to build and energy intensive to run.

Find out more here



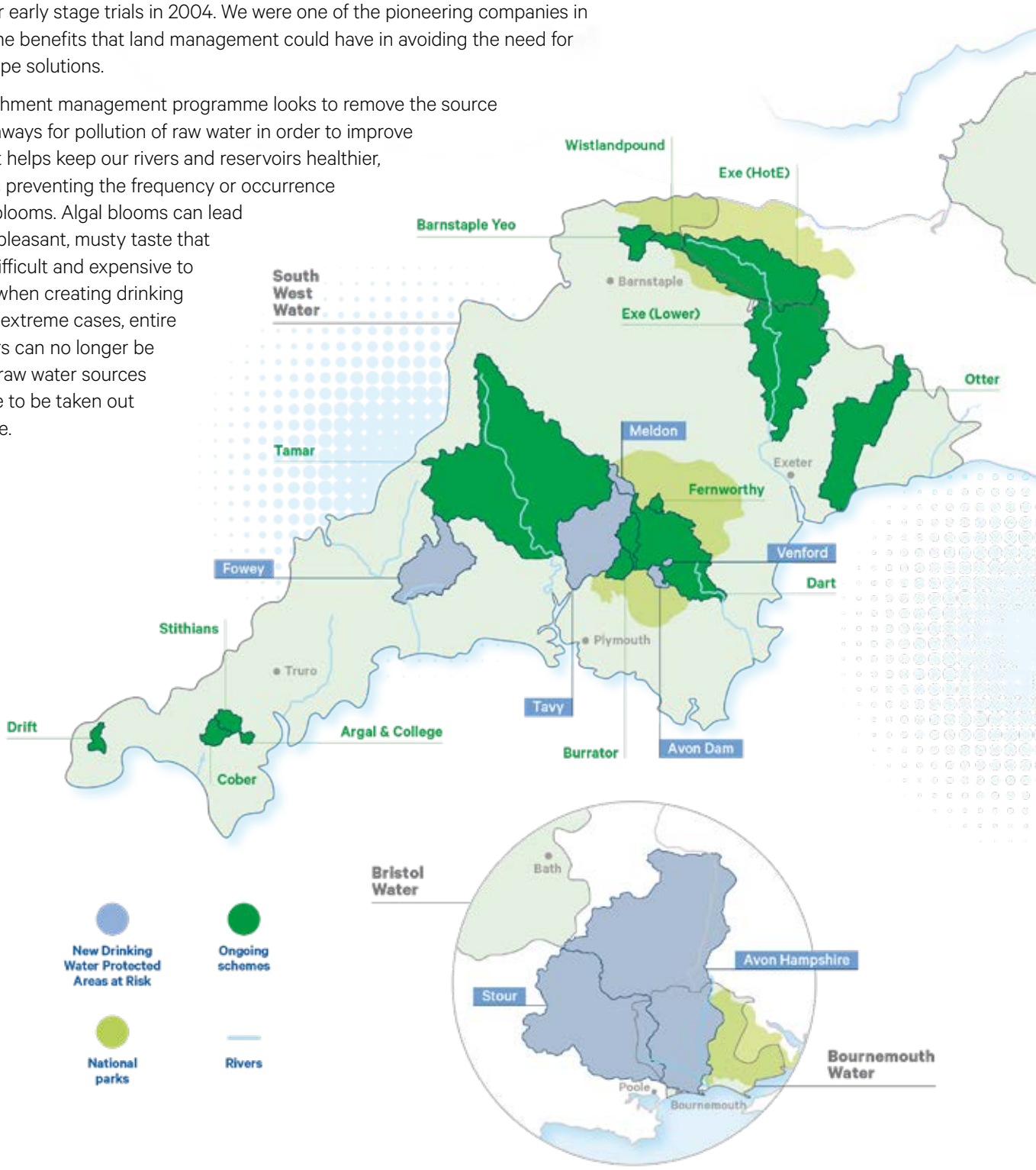
Biodiversity Strategy

How are we going to do this?

We are committed to continuing our UST programme and we have prioritised land areas in catchments that influence the quality of source waters supplying our surface water treatment works without advanced treatment.

Our Upstream Thinking programme has been operating for nearly twenty years, since our early stage trials in 2004. We were one of the pioneering companies in seeing the benefits that land management could have in avoiding the need for end of pipe solutions.

Our catchment management programme looks to remove the source and pathways for pollution of raw water in order to improve quality. It helps keep our rivers and reservoirs healthier, and thus preventing the frequency or occurrence of algal blooms. Algal blooms can lead to an unpleasant, musty taste that is very difficult and expensive to remove when creating drinking water. In extreme cases, entire reservoirs can no longer be used as raw water sources and have to be taken out of service.



What benefits does this deliver?

It will deliver against a range of outcomes:

The reduction of agriculturally derived phosphates, nitrogen, ammonia, sediment, pesticides, cryptosporidium, DOC, etc., within catchments and at WTW raw water intakes

The retention of water in catchments during peak rainfall events and slow delivery of this water between storms, with consequent high flow pollutant and flooding risk reduction and low flow dilution benefits for our drinking water and wastewater services

Natural capital improvement; species and habitats (biodiversity) improvements, increased carbon sequestration/storage, natural flood risk management and wider recreational and societal benefits.

Water that is safe and tastes, looks and smells great – Our plans for our WTW's improvements

Why is this important?

Customers today can have confidence that the water that comes out of the tap is safe and clean. We have made great progress and today our drinking water quality is among the best in the world.

Despite the investments and progress we have made we recognise that we must always look forward and to prepare for new and emerging risks. The impacts of climate change on river and reservoir levels is impacting the quality and quantity of our source waters and requiring us to look beyond the traditional sources we have historically been able to rely on.

What are we going to do?

- **3** substantive rebuilds
- **7** upgrades through new processes
- **7** enabling works for mobile treatment technology
- This programme will complement our treatment works upgrades in AMP7 which are well underway. The AMP8 programme includes upgrades at Allers, Dotton, Pynes and Woodgreen treatment works that will benefit the taste, smell and appearance of the water we supply.

How are we going to do this?

Nearly £200m of treatment process improvements are planned for 17 water treatment works across our operating areas.

For South West Water we will deliver a substantive rebuild, or a new WTWs if it is more economic, at Bratton Fleming (North Devon). This continues on from our Green Recovery plans in North Devon which are improving the resilience of the North Devon supply area, by improving the taste and appearance of our treated water as well as continuing to improve resilience and supply security.

Five further WTWs upgrades are planned to enhance our treatment works with new process technologies that ensure our WTWs remain modern and effective at treating our sources waters which provides confidence and protection for customers. The improvements are largely concentrated in East Devon, Exeter and Tiverton with North Cornwall also benefiting.

And lastly, we are preparing to mitigate the risks of raw water deterioration by upgrading 7 WTWs to allow for the rapid mobilisation and deployment of mobile treatment technologies so that our WTWs remain in service during adverse raw water conditions. These investment cover mid-Devon and Cornwall.

For Bournemouth customers our investment in AMP8 is lower. This reflects the significant investment we are making in AMP7 to modernise Alderney and Knapp Mill WTW which supply 320,000 customers (85% of the population served in Bournemouth) at a cost of c.£180m.

The remaining smaller works in Bournemouth are prioritised for general maintenance investment to ensure they continue to supply customers with high quality water. This is alongside one of our planned process upgrades at Woodgreen. Woodgreen supplies a population of around 40,000 in the northern area of the new forest from a good quality ground water source. We plan to provide additional treatment for manganese removal to protect this supply should a trend of increasing levels (causing discolouration) continue. This will mean that >90% of our Bournemouth water customers are served by new or recently upgraded WTWs.

Our investment programme for Bristol is substantial, at £170m. This is in addition to normal levels of ongoing maintenance investment. We are planning to rebuild two WTW's that can supply up to 517,000 population. It is similar in scale to the investment we made at Bournemouth which removed the highest risk and aged processes in AMP7. This investment will set our Bristol region in good stead for the future by tackling the highest WTW's risks now.

What benefits does this deliver?

For water quality compliance, We have regularly maintained an industry upper quartile position since the introduction of the measure and our South West region was the 2nd best performing water and sewerage company in 2022. This measure reflects the high priority we and our customers attach to maintaining drinking water quality and that companies should be penalised for poor performance and poor risk management. We are committed to striving for a perfect (zero) CRI score.

For water quality contacts, our continued investment in granular activated carbon (GAC) based solutions at our highest risk sources to improve the acceptability of our supplies. We are planning to continue our substantial year on year step change in our performance. Whilst we have delivered good progress, we remain an industry outlier so we have challenged ourselves to deliver a 33% improvement by 2030. This will be achieved through our cast iron mains replacement programme which will supplement the ongoing improvements at our water treatment works and our mains cleaning programme

Progressively address emerging risks – Our plans for our networks and monitoring future risks

Why is this important?

As one of Britain's most treasured tourist regions, our infrastructure flexes with visitors in the summer months while supporting thriving urban centres like Bristol and Exeter all year round.

This itself presents challenges which is why we are adopt a source to tap approach in the management of all water quality risks, including: lead; appearance, taste and smell; and emerging contaminants.

Lead pipes, which were widely installed before 1970, provide a small but measurable threat to public health. Whilst we are currently taking measures to minimise the level of risk to customers and as a result, failures against lead standards are rare, we recognise the need to be proactive and ambitious in removing lead from our network.

The appearance, taste and smell of our water is key area that drives up trust in the services we provide with our customers.

Growing global interest and research into so called 'emerging contaminants' or 'forever chemicals' is an area the water industry needs to better understand, and if necessary, prepare to mitigate against. Improved knowledge of prevalence and fate of these contaminants in the water environment will enable us to assure ourselves and our consumers that drinking water supplies are not at future risk.


Littleton
Bristol
Stowey
Cheddar
Bratton Fleming
Woodgreen
Allers
Greatwell
Pynes
Dotton
Bournemouth
Prewley
Lowermoor
Bastreet
Delank
Venford
Roadford
Dousland
Avon
St Cleer
Colliford
Consumer acceptability – discolouration
Consumer acceptability – taste/smell
Consumer acceptability (risk)
Deteriorating raw water quality
Microbiological

What are we going to do?

Removal of 40,000 lead pipes to make significant headway on our journey to a lead free network by 2050

Continuing to maintain our trunk main conditioning regime and promoting new schemes

Delivering a second phase of our original smart networks trial in Bristol, with the overall goal of generating a working network model that has established the local requirements of a "calm network", looking at changes in water quality, pressure, chlorine and temperature.

Increasing our flushing programme at targetted DMAs informed by our DMA flushing model with a particular focus on DMAs supplied by Restormel WTW and St Cleer WTW which are benefiting from Manganese removal in AMP7

Quality driven mains renewals – (new to phase 5) an ambitious programme of c.£70m is proposed which will enable the replacement of 100-150km.

Step up our research and build our knowledge and capabilities around emerging contaminants. We will utilise our dedicated R&D laboratory through our University of Exeter CREWW partnership to do this.

How are we going to do this?

Our lead strategy was submitted to the DWI in March 2023. It recognises the need to be proactive and ambitious in removing lead from our network. This is despite the current steps we are taking to minimise the level of risk to customers, which is helping to keep failures to a minimum.

We have set ourselves a challenging ambition to have a lead free network no later than 2050. This means replacing all of these lead pipes across our network. Our strategy does not stop at the pipes which we are responsible for. Building on trials to date, we plan to support customers to replace their own lead supply pipes. Our strategy is targeted at supporting levelling up, raising awareness and empowering our customer to act – as well as – protecting the most vulnerable in society.

We will deliver calm networks for discolouration and burst mitigation. We are entering phase five of our strategy to manage water appearance, taste and smell. We have seen a ten-fold improvement in performance since the early 2000's and we are continuing our strategy of a balance programme of investments that have been developed and proven to work in the other phases of our strategy.

Over the last 10 years we have increased the monitoring and control of our supply network significantly by installing 1,800 new logging devices and 400 smart control valves. We are actively working with other companies through the Ofwat innovation funded project 'Safe Smart Systems', to maximise their value by improving the autonomous control of water networks through a dedicated decision engine using Artificial Intelligence.

What benefits does this deliver?

For lead

Our primary objectives are to: achieve 100% compliance with all Water Quality (WQ) standards and to reduce the potential health risk presented by lead in drinking water. We aim to strike the right balance between free and subsidised replacement and aim to replace between 20,000 and 30,000 lead communication and supply pipes in AMP8 on our journey to a completely lead free supply by 2050.

For appearance, taste and odour

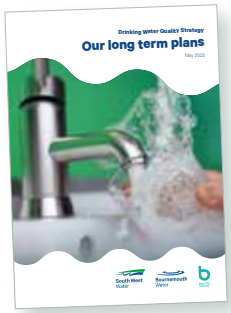
Our cast iron mains replacement programme will supplement the ongoing improvements at our water treatment works and our mains cleaning programme. This investment will ensure we meet future reductions in water quality contacts in the most sustainable way over the long-term.

For emerging contaminants

By undertaking the proposed research with global leaders in this field, developing novel analytical approaches utilising so called 'effects based methods', and piloting state of the art on-line water quality monitors and off-line analytical techniques, we will be better able to assure consumers about future risks and to effectively plan any investments needed.

Our future plan to 2050 – water quality

Find out more here



Long-term Drinking Water Quality

Find out more here

Our Strategic Direction to 2050

Water is a fundamental requirement of life and wellbeing, and our customers trust us to provide clean and safe drinking water every day. Drinking water quality is all customers' main priority. It's seen as our purpose to bring top quality drinking water to people, to protect and support public health. Failing to do so is seen as too serious for this to be anything other than the number one priority.

As part of our long term delivery strategy, we have considered different future scenarios with regards to raw water quality deterioration and taste odour and colour of drinking water. We believe raw water quality is likely to deteriorate as climate change continues, driving more frequent and unpredictable algal blooms as well as changes in aquifers and hydrological conditions that could effect a range of microbiological and chemical parameters in our water sources. In addition to this, we strive to prevent customer complaints about the taste, odour and appearance of their drinking water as regulator and customer expectations continue to tighten, as they have done in the past decades. We must also tackle the long standing legacy of lead pipes in ours and customers pipework, the need for which is accelerated by the World Health Organisation's most recent advice that there is no safe level of lead in drinking water.

- Continue to upgrade our water treatment works with additional treatment to protect against algae risks and taste and odour causing compounds, upgrading all of our remaining seven works that do not have such treatment by 2050.
- Continue to install additional filtration at our water treatment works to reduce manganese concentrations to below 1 part per billion to prevent staining of the network by this dissolved metal.
- Reduce consumer contacts to 0.5 per 1000 customers by a range of measures, including water treatment works upgrades and networks investment such as mains replacement and smart water networks.
- Replace all lead pipework within our system by 2050 to remove this long standing legacy from our networks.
- Deliver programmes of work synergistically with capital maintenance to provide the best value for customers.

Part two: Our water resilience plan 2025-2030

Key highlights from our water resilience plan 2025-2030

Water is a precious source. It supports both the natural environment and the communities and visitors to our regions in the Greater South West.

Our Water Resilience Plan 2025-2030 builds on the experience and learnings we have taken from the current period. Our Plan also builds on the significant investment we have made in creating additional also water supplies in the current period particularly in Cornwall and Devon. It has a sharp focus on:

- Water efficiency, both with respect to household and business demand for water
- Reducing wastage of water particularly through leakage control
- Enhancing our natural environment through studies to determine the sustainable levels of abstractions from our rivers and then implementing solutions to achieve those reduced abstractions and hence improvement to our natural environment.

Meeting the needs of our household customers, local businesses and tourists/visitors for safe and reliable water

We provide water to around 3.5 million residential customers and over 100,000 business customers. And each year our region swells to accommodate around 10 million visitors.

On top of that our region is growing and we want to support that growth. Our regional growth is centred heavily on tourism and agriculture.

Our Water Resilience Plan enables us to continue to provide safe and reliable water supplies to the growing number of people who rely on our service. Enabling access to water resources and the ability to serve communities with safe clean drinking water is and always has been our customers and stakeholders number 1 priority.

Continuing our long term commitment to investing in new water resources

Our plan builds on the significant investment we have made in creating additional water supplies in the current period, particularly in Cornwall and Devon.

Delivering more environmentally sustainable rivers and water based habitats

Our Plan will enable us to maintain reliable supplies of safe water in the face of substantially reduced abstractions that aim to deliver more environmentally sustainable rivers and water-based habitats in our region.

STOP THE DROP

2022 saw a
severe drought
only expected once
in every 200 years

We are investing
£125m
to increase our access
to water to we need it most

3 new sources
acquired over the last 15
years

We are forward thinkers with a plan to ensure water security into the long term in the face of foreseeable challenges and risks

There are many challenges that we face in our central purpose of providing safe and reliable water supplies. Those challenges include but are not limited to:

- Increased demand driven by a growing population: we are forecasting a growth in population in the Greater South West – a combination of net migration into our region from across the UK and base growth
- A changing climate that impacts availability and quality of water resources: we can expect more variable weather patterns in the coming years and in the future we will face longer, drier and hotter summers and more erratic rainfall. Climate change has an impact on how we think about accessing and storing water
- The ability to transfer water across our region
- With our foresight, our Water Resilience Plan enables us to continue to perform that critical function in the face of the many future water resource pressures that we foresee.

Tackling both supply and demand side

In future we must serve a growing population from reduced available abstraction, requiring both demand side and supply side investment to ensure resilient water supplies are maintained. In our Water Resilience Plan we achieve this through a combination of demand reduction investment and additional supply schemes. Our Plan continues that focus on both supply and demand sides.

In fact, our plan is based on the principles of control demand first, introduce supply options later, ensuring we are ready to adapt our plan at agreed decision points where needed. We plan to achieve our statutory demand management targets, whilst investing in supply options for future AMPs.

New local resources together with new regional resources

Our plans include a mix of new local sources of water which can be developed more quickly and larger regional resources which we will share with neighbouring water companies.

Key water resilience plan outputs by 2030

- Over 50 million litres per day of reductions in licensed abstraction volumes from environmentally sensitive rivers and schemes underway to deliver the glidepath reaching 223 million litres per day across our longer term planning period
- Reducing leakage by a further 19.3 million litres per day (being a 15% reduction from 2025 and 34% reduction from 2018)
- 850 km of leakage driven mains replacement
- Reducing household consumption by 14.6 million litres per day and business consumption by 3.3 million litres per day through water efficiency initiatives
- Installing 500,000 new smart meters across our regions (to 2035) to enable us to pinpoint water wastage. This, combined with facilitating new innovative tariffs for fairer charges, is the first step to customer transparency of usage and understanding of usage drivers as well as supporting customers to actively manage their water budgets.
- Developing 4 new water supply schemes equivalent to 70 million litres per day. This includes developing both the Mendips Quarry and Poole Harbour regional supply schemes and developing and commencing construction of the new Cheddar 2 reservoir. It is also in addition to the substantial new water resources currently being developed (Blackpool Pit, South Cornwall desalination plant etc).
- Installing 5 new strategic interconnector schemes and one mains pipe, totalling 70km, plus upgrades to existing networks (increased pump capacity) to enable us during a drought and other resilience challenges, to move 60% more water between our South West Water supply zones
- 8% household Per Capita Consumption (PCC) reduction from 2025
- 3% reduction in business demand from 2025
- Progressively addressing emerging risks including climate change, population growth and sustainability of river abstractions.

Our water resilience journey so far

The challenges from covid and drought

From a water resources perspective the current period has been a challenging time in the South West, which still to this day remains drought declared by the Environment Agency.

We have seen demand for water increase, driven principally by the impact of the Covid pandemic in the early years of the current period and then by the societal changes that have followed the pandemic, principally the far greater number of people working from home.

During the pandemic we saw significant change in population distribution and the pattern of demand, particularly in Devon and Cornwall. This included an increase in population equivalent to between a quarter and a half of the expected 30 year increase to 2050.

Combined with those pressures, 2022 saw a record hot, dry year in the South West which drove record demand for water. That severe drought is still impacting on parts of the country today. The natural environment suffered through the drought and reservoirs were drained to support the river network (our storage reservoirs are used to feed and protect the river networks – we release water from the large majority of our reservoirs into the rivers).

This drought shows what could be commonplace in the future – as the likelihood of hotter, drier summers and more heatwaves increases, impacting on the availability of water resources and our access to unlimited clean drinking water. Hence why climate change and its impacts are a key driver to the shape of our water resilience plan.

Our response

In combination, the rapid societal changes, record population growth and 2022 drought in the South West put our water resources under intense pressure.

We responded quickly and in an agile way to those intense pressures in the current period. Supplies were continuous to our communities. We were agile and worked quickly to re-route and manage the resources situation across our regions.

We put substantial investment into water resilience measures. We brought on-line new water sources, for example Hawks Tor, the River Lyd pumping scheme, a new water treatment works at Porth Rialton and we are currently in construction phase for our Blackpool Pit scheme and our new South Cornwall desalination plant.

Combined, these new resources have increased the water resources available to Cornwall and Devon by 30% and 12% respectively of average demand in those areas. By 2025 we will have additional water resources available to those regions of 45% and 30% respectively of average demand.

Our current period response was not just on the supply side – it also included water efficiency and demand side measures.

We made a step change in investment to tackle leakage and support to help customers to use less water. We are fixing on average over 2,000 leaks per month in Cornwall and Devon combined. We also acted to reduce our own use of potable water in our wastewater treatment processes.

We trialled a first in the sector Stop the Drop water efficiency scheme. Also, under our Save Every Drop customer engagement campaign, we drove water efficiency messaging to our household customers, businesses in our region and tourists and visitors in equal measure. We supported these messages with free water efficiency devices including shower heads and water butts, free water audits in homes and free customer supply pipe leakage repairs – to date we have given away over 240,000 free water efficiency devices. We offered similar, free support to businesses in our region.

Our water resilience plan 2025-2030 is built on our learnings from the current period

Equally importantly to all that we did in response to those water resources pressures, we learnt lessons as well.

In short, we saw the need to secure a more diversified portfolio of water resources and increase our efforts on the demand side and with water efficiency initiatives.

Our Water Resilience Plan 2025-2030 builds on the experience and learnings we have taken from the current period. Our Plan builds on the significant investment we have made in creating additional water supplies in the current period particularly in Cornwall and Devon. It has a sharp focus as well on:

- Water efficiency both with respect to demand for water and reducing wastage of water particularly through leakage control, our focus in 2025-2030. Much of this will be enabled through the roll out of a large smart metering programme

- Enhancing our natural environment through studies to determine the sustainable levels of abstractions from our rivers and then implementing solutions to achieve those reduced abstractions and hence improvement to our natural environment.

Our plan from 2025 is to build on our already significant investment in new water resources and strategic network transfers to break the drought cycle – and ensure the environment is protected from abstractions, developing first of a kind desalination and water reuse schemes to support the water cycle.

Increasing supplies

Investing in new water resources

South West Water has invested over the long term in new water resources. Over about the last 15 years we have invested in three new water resources – Park, Stannon and more recently Hawks Tor. Hawks Tor was purchased in early 2022 and, as the drought of that same year intensified, we moved rapidly to install pumping equipment and we pumped water from that resource into Colliford lake over the winter of 2022/23.

More recently we have invested significantly to increase water resources available in the Colliford and Roadford water resource zones by 45% and 30% respectively by 2025. This of course includes our new South Cornwall desalination plant and accessing addition water resources from Blackpool Pit.

We are investing in accelerated infrastructure initiatives to provide additional resilience in the Roadford and Colliford areas over the next two years. Our plan is to continue investment in new water resources for our regions.

Investing in the Isles of Scilly

The Isles of Scilly currently rely on groundwater sources and the treatment processes require improvements. We will meet these requirements and provide a desalination capability by 2025 to ensure this area of our region has a secure water supply. These initiatives will improve our supply-demand position ahead of the WRMP24 plan delivery.

Managing demand

Over the last several years the demand for water in our region has increased due to a combination of factors – population growth within our region and the linked demand increases driven by the Covid pandemic and the societal and water use changes that brought to our communities. Currently our customers, on average, are using more than 140 litres per person per day. Our long term target is to reduce that volume to 110 litres by the year 2050.

To reduce demand closer to previous levels, we have increased our water efficiency initiatives and leakage reduction for the years 2023 to 2025. As part of our Save Every Drop customer engagement programme we are providing our customers with water saving devices, water audits and leakage fixes – all at no cost to the individual customer. To date we have given out over 240,000 water saving devices – all free of charge.

We need to do all we can to save water. We have reduced leakage levels from our networks. Through this year we have repaired around 2,000 leaks each month, offered free customer leak repairs as part of our targeted campaign and increased our use of network monitoring and artificial intelligence. We will have reduced leakage by 15% in the period 2018 to 2025. By 2025, the rate of leakage on our network will be c.11% of what we produce for drinking water, with an extra 4% of leaks occurring on customers networks. By 2030 we will reduce leakage by a further 19.3 million litres per day (being a reduction of 17% in South West Water/Bournemouth and 8% in Bristol from to 2025 to 2030).

We are providing similar services to our non-household customers, including a financial incentive scheme where we are offering to contribute to the cost of businesses who are executing a plan to become more water efficient.

We are also focused on reducing our own water leakage. To date we have reduced consumption across our own sites, saving on average 6 million litres a day.

In the South West, while we have one of the highest levels of meter penetration in the country, we are already working to convert our meter fleet to "smart" meters. We have a 'Green Recovery' scheme that has brought forward the delivery of smart metering in the Roadford area from 2025 to 2023.

And with our Wessex Water neighbours we are co-funding a large water reuse scheme at Poole.

Improving our network

We are constantly improving our network through investments which increase the flexibility and operability of our assets and our resilience to drought and other challenges. This makes it easier to move water around to where it is needed, which increases the resilience of our network by making water supplies more reliable to a greater area. An example of this type of investment is the recent increase in pumping capacity at Brandis Corner during Summer 2022, which allows additional treated water to be imported into the area from Northcombe WTW. Northcombe is supplied from Roadford Reservoir, resulting in the North Devon area being bolstered by the availability of greater support from the zone's strategic reservoir.

Our investments to 2025

- Conversion of naturalised clay pits at Hawks Tor and Blackpool Pit into new reservoirs to supply Cornwall
- A new desalination plant in South Cornwall to provide greater drought resilience to the area and five new desalination plants on the Isles of Scilly for water supply
- Reduce leakage by at least 15% (relative to 2018 baseline)
- 6% reduction in per capita consumption
- 60,000 smart meters

The water resilience challenges that we face

We have foresight and our plan addresses the many future water resource pressures that we foresee.

Growing population

In the South West our population is growing. This growth was accelerated during the Covid pandemic where more people started (and are still) working from home. During the pandemic we saw significant change in population distribution and the pattern of demand, particularly in Devon and Cornwall. This included an increase in population equivalent to between a quarter and a half of the expected 30 year increase to 2050.. Our public water supplies must be resilient to enable us to provide water reliably to our growing population.

People's changing use of water

Over time people's relationship with water and their water usage patterns have changed. For example, unlike 10 years ago, today around 1 in 10 houses has a hot tub. People's relationship with water changed even further in the pandemic. Our forward plans must meet our customers' forward expectations of water use.

Climate change

Climate change is driving changing weather patterns. In the South West we currently rely upon rivers and surface water for 90% of our public water supplies. To enable us to be resilient through climate change we need to invest in climate independent sources of water and a more diversified portfolio of raw water sources.

Environmental protection

Across the Greater South West we rely upon the river networks for 90% of our water supplies, with 10% coming from groundwater boreholes. The reason for the reliance upon the river network is as a result of the geology of the region – being a largely granite peninsula there are few sustainable boreholes. The large majority of our 23 storage reservoirs we have across the regions are used to feed and protect the river networks – we release water from the reservoirs into the rivers. With 90% of our supply coming from surface water, we must ensure that our abstractions are sustainable and not leading to the deterioration of our natural environment. To achieve our Environmental Destination ambitions we have to invest in both additional water supplies and demand reduction measures.

Our customers' strong preference to not resort to usage restrictions

Our customers accept that from time to time usage restrictions may be appropriate. However, they have been clear with us: they do not want us to resort to usage restrictions except in the most severe of events. To achieve this we need to invest in climate independent sources of water and a more diversified portfolio of raw water sources.

Our customers' strong preference for reduced leakage

Across all of our water supply areas our different customer bases want us to prioritise reduction in leakage, which they rightly see as waste. Our customers acknowledge that about 30% of leakage occurs from customer supply side pipes and are equally keen for us to help them address that leakage.

The Government has also set long term leakage reduction targets that we along with all other water companies must meet.

Tackling leakage is a forever task – just to "stand still" requires significant leakage investment, to reduce leakage significantly requires additional and large investment. Of course, this investment offsets otherwise necessary investment in new supplies.

Government targets

The Government has legislated performance targets for many aspects of water resource management.

On the supply side the Government has implemented licence capping and "no deterioration" requirements around abstractions to protect the environment.

On the demand side the Government expects water companies to meet several long term targets – reduction in leakage, reduction in Per Capita Consumption (ie, household draw on potable water supplies) and reduction in Demand Input.

As part of our plan for future water management we have to – and will – meet these targets.

Customer behavioural change

Water is a finite resource. Ultimately, water resilience choices are made by our customers every day in their kitchens, bathrooms, laundries and in their gardens. We have to engage with our customers so that they can understand the impact that their choices have on our water resilience and the environment and they can then make informed decisions about their water use and actively manage their own water budgets.

Get big – get regional!

For good and obvious reasons, more and more water management is being done on a regional basis. Regional water planning allows individual water companies more options in terms of water supplies and water reuse options and therefore greater cost efficiency and greater resilience for all of their customers.

Encouraging customers off potable supplies

A potentially material number of our customers could use non-potable water for some of their water uses. For example, using rain water in the garden or to feed dairy stock. The more we can satisfy our customers' water needs with non-potable rather than potable supplies potentially takes pressure off the supply/ demand balance.

Water companies cannot do it alone

Water companies acting alone are not capable of achieving many of our water resources goals. To do that we must work in partnership with customers and the Government, each of whom has just as important role to play in achieving resilient water supplies. Ultimately it is customers who determine their own demand. And it is the Government that must, through legislation and regulation, drive the policy changes needed in the water resources arena. By way of example, we are still not a statutory planning consultee. We are merely required to supply water to new developments without having a real say in how, when or where that should be done.

To achieve our joint goals everyone has their own important role to play.

Our plan for water resilience 2025-2030

Our long-term supply and demand forecasts show that if we do not take action now, there is a significant risk that we will not be able to meet our customers' demand for water.

This is because of a number of factors:

The future climate of our region is likely to contain longer, drier and hotter summers and more erratic rainfall. This will include prolonged periods of dry weather and increased flood events. Our draft WRMP24 baseline supply forecast considers the risks during dry weather as this is when the supply-demand balance is most vulnerable

To achieve our Environmental Destination, we must reduce the volume of abstractions under a significant proportion of our abstraction licences. This is also referred to as "licence capping" and "no deterioration" under the Government's Water Framework Directive. In short, to achieve a better environment and more sustainable abstractions we are going to have to substantially reduce our water take from our rivers;

The population in our regions continues to grow as does our regional economy driven by tourism and agriculture. All of these people and uses will put further pressure on our precious water resources

We have to be taking significant action now to achieve Government long term water efficiency and demand targets.

To mitigate these risks, in our draft WRMP for Cornwall, Devon and Bournemouth we identify options and determine a Best Value Plan to maintain a water resources surplus in each of those water resource zones. We have a range of options available to us for reducing demand for water and increasing water available for supply. From our available options we create a preferred plan using our best value decision-making process.

To ensure we are resilient to low rainfall during extreme drought events, our draft WRMP24 baseline deployable output (yield) is based on a 1 in 500-year drought event, derived from stochastic datasets and rainfall runoff models. Our previous plan was based on a 1 in 200-year drought event. By planning to more extreme drought conditions we reduce the risk of emergency drought actions and the frequency of preceding actions such as restrictions on use and temporary increases in abstraction (drought) permits. This improves our level of service to customers and reduces our reliance on supply-side drought actions that take more water from the environment.

The key elements of our Water Resilience Plan are summarised below.

Demand management

Reuse and recycling – deliver more innovative schemes to harvest rainwater and reuse final effluent

Reduce leakage – from 2025 we will deliver year on year reductions in leakage levels, saving over 86 million litres per day across all zones by 2050, a 50% reduction compared to 2017/18 levels

Metering and efficiency – deliver a metering strategy that supports customers in using less water alongside initiatives to improve home and business water efficiency

Increasing supplies

New sources –invest in new supply options to offset reductions in water availability driven by climate change and our goals for enhancing the environment

Flexible, regional supplies- we are committed to a resilient infrastructure, capable of meeting the challenge of climate change by building greater capacity, through building more regional reservoirs and interconnection, facilitating greater transfer and recycling

Reducing demand – our plans for 2025-2030

Why is this important?

First and foremost, we need to ensure the availability and long-term supply of our source waters through resilient water resources and healthy catchments. Our Environmental Destination has identified specific watercourses that we need to protect from over-abstraction and it is becoming more apparent that freshwater resource is limited in our supply area (and with climate change becoming less reliable).

We want to support a thriving and growing economy – driving water efficiency is not just good for the environment, it also means homes and businesses can save money. For customers saving just 10 litres per day saves £42 off their annual bill.

Substantial water savings can be made through water re-use and recycling – it is the right thing to do and we want to support our customers in doing so.

By 2050, we want customers to use less potable water. All their demand will still be met but a proportion will be through non-potable supplies such as rainwater harvesting, water recycling and storage at home for usage that does not require drinking water.

What are we going to do?

Installing 500,000 new smart meters across our regions (to 2035) to enable us to pinpoint water wastage. This, combined with facilitating new innovative tariffs for fairer charges, is the first step to customer transparency of usage and understanding of usage drivers as well as supporting customers to actively manage their water budgets.

Reducing household consumption by 14.6 million litres per day and business consumption by 3.3 million litres per day through water efficiency initiatives.

Support businesses to reduce their consumption too through installing smart metering and other demand reduction programmes.

Reducing leakage by a further 19.3 million litres per day (being an 15% reduction from 2025 and 34% reduction from 2018) including 850km of leakage driven mains replacement

How are we going to do this?

Our plan includes an ambitious demand management programme to reduce demand to levels that meet the Government's Environmental Improvement Plan targets for all of:

- Leakage
- Per capita consumption
- Non-household use

This supports our customer and stakeholder preferences and reduces carbon emissions from water treatment and pumping.

Our demand strategy will deliver leakage management, smart metering (including compulsory metering in our water stressed areas) and water efficiency reductions for domestic and non-domestic customers.

Leakage management

From 2025 we will deliver year on year reductions in leakage levels. Our total leakage across all zones will be reduced to 86 million litres of water a day by 2050, a 50% reduction compared to 2017/18 levels. We plan to achieve this through a combination of mains replacement, enhanced active leakage management and increased pressure management.

Smart metering

Currently 77% of our household customers and 96% of non-household customers have a metered supply. These meters are old technology and referred to as basic meters. We will retrofit these meters with smart meters (advanced metering infrastructure) between 2025 and 2035. New properties and any customers switching from unmetered to metered will receive a smart meter. This comprehensive metering programme will enable us to pinpoint water wastage. It is also a first step to customer transparency of usage and understanding of usage drivers as well as supporting customers to actively manage their water budgets. By 2050 94% of households and 98% of non-households will be metered.

Compulsory metering

Our Bournemouth and Isle of Scilly zones are water stressed areas and we plan to implement compulsory metering in these areas. Our customer and stakeholder engagement has highlighted metering as the fairest way to charge for water and by 2030 91% of households will be metered in Bournemouth (up from 76% from 2025).

Household water efficiency

The combined benefits of smart metering and household water efficiency initiatives will help us achieve the 110 litres/head/day by 2050 target. Smart metering will increase customers' awareness of their own use and we will offer them water efficiency initiatives to enable them to reduce their usage. These initiatives include home visits, leaky loo detection, water audits and a variety of education and school visits to promote water efficiency.

Non-household water efficiency:

Our smart metering programme will provide all non-household meters with smart meter technology. As with household customers, this will provide water users with information on their usage and we will offer demand reduction initiatives. We will offer businesses water efficiency visits targeted at their specific sector usage. And where practicable we will convert potable to non-potable supplies.

Further gains will be delivered in the longer-term through rainwater harvesting and water recycling:

Rainwater harvesting

We will work with developers to install new properties with rainwater harvesting systems to provide a non-potable supply for toilets and washing machines. This builds upon our current period action of encouraging local customer storage – provision of free water butts at the household level and encouraging businesses to invest to store more water

Water recycling

As part of the West Country Water Resources Group Regional Plan, a strategic scheme is under development to abstract the treated effluent discharged from Poole Wastewater Treatment Works as a source of water for supply further downstream.

What benefits does this deliver?

For leakage, we set the industry frontier performance in our Bristol region. We will learn from this success across our other regions as we strive to meet the challenging targets we have set ourselves for a further 18% leakage reduction by 2030 across South West and Bournemouth. As leakage levels push towards the frontier position it gets disproportionately more expensive to reduce them further. This is why we are only seeking a 8% improvement in Bristol region.

For PCC, we will achieve a 8% household Per Capita Consumption (PCC) reduction from 2025 (being 14.6 million litres per day reduction by 2030). This puts us on a trajectory where we will be on track to meet the 2049/50 target of 110 litres per person per day.

For business demand, we will achieve a 3% reduction in business demand from 2025 (being 3.3 million litres per day reduction by 2030). This puts us on a trajectory that gets very close to achieving both the Government's interim 2037/38 target and the 2049/50 target.

Increasing supplies – our plans for 2025-2030

Why is this important?

Demand reduction alone will not be sufficient to address the challenges identified in our WRMP24.

Although our customers expressed a strong preference for demand reduction, they also recognised the benefits are highly uncertain and they see supply-side options as more reliable.

Also, to meet our Environmental Destination ambitions, we need to achieve a 12 million litres per day reduction in abstractions from environmentally sensitive rivers from 2025 and we need to have schemes underway to deliver the glidepath reaching 223 million litres per day across our longer term planning period.

What are we going to do?

- Developing four new water supply schemes equivalent to 70 million litres per day or 5,000 households served. This includes developing both the Mendips Quarry and Poole Harbour regional supply schemes and developing and commencing construction of the new Cheddar 2 reservoir. It is also in addition to the substantial new water resources currently being developed (Blackpool Pit, South Cornwall desalination plant etc)

- Installing five new strategic interconnector schemes and one mains pipe, totalling 70 km, plus upgrades to existing networks (increased pump capacity) to allow us to move water more flexibly between and around our regions and increasing the resilience of our network
- Significant reductions in licensed abstraction volumes from environmentally sensitive rivers of over 50 million litres per day
- Upgrading five WTWs in Devon and Cornwall, completing major upgrade of two of our larger WTWs in Bristol and rebuilding one treatment work in North Devon – all of which contribute to the flexibility and resilience of our water supply network
- Support the development of Regional water resources so that at a regional level water resources and their costs can be optimised.

How are we going to do this?

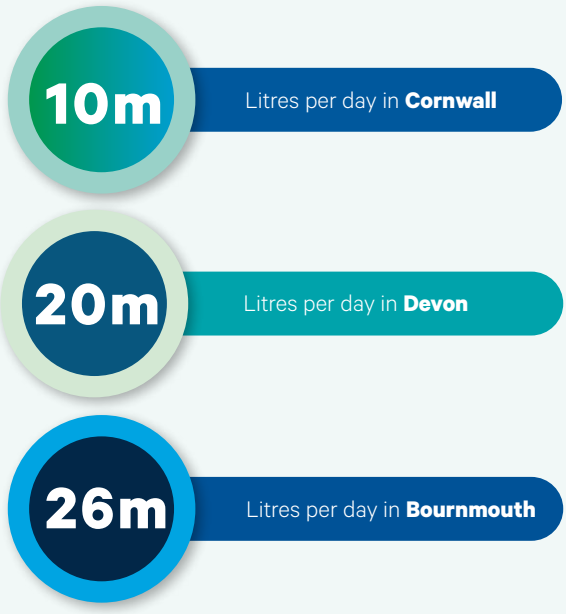
In parallel to implementing demand initiatives, we will deliver new supply schemes in four of our six regions. The exceptions are Bristol which has a sizeable water surplus and our Isles of Scilly zone. We are already delivering new supplies to our Isles of Scilly zone through desalination plants designed to meet the future needs of this zone and provide drought resilience over the next 25 years.

Our investments are shown by region on the following page.

What benefits does this deliver?

For water available for supply

For water available for supply we will in our plan to 2030 commence investment to increase supply by over 50 million litres per day by 2035, comprising:



Our investment – wider view of where we're investing

Bournemouth Water

£13.6m

Smart Metering

Compulsorily meter customers by 2030 so that customers pay for the water they use and so that we can support them to reduce consumption.

£3.4m

Leakage

Combination of leakage driven mains replacement, smart metering and water efficiency investment to reduce leakage.

£35m

Supply

Providing 1 in 500 year drought resilience and investing in the development of the Lymington/ Ampress groundwater source to provide additional 1Ml/d by 2030/31. This investment sits alongside our Strategic Regional Supply Options of the Poole Harbour final effluent reuse and Mendips Quarry schemes which are largely in their development phases for AMP8.

£1m

Water Efficiency

Delivering a range of water efficiency initiatives to help household and non-household customers be more efficient in their water use.

BRISTOL WATER

£24.1m

Smart Metering

Smart metering household customers and small non-household customers by 2035 (where possible) so that customers pay for the water they use and so that we can support them to reduce consumption.

£29.7m

Leakage

Combination of leakage driven mains replacement, smart metering and water efficiency investment to reduce leakage.

£1m

Water Efficiency

Delivering a range of water efficiency initiatives to help household and non-household customers be more efficient in their water use.

South West Water

£44.9m

Smart Metering

Smart metering household customers and small non-household customers by 2035 (where possible) so that customers pay for the water they use and so that we can support them to reduce consumption.

£57.3m

Leakage

Combination of leakage driven mains replacement, smart metering and water efficiency investment to reduce leakage.

£37.8m

Supply in Colliford

Providing 1 in 500 year drought resilience and investing to deliver a 10Ml/d increase in treatment capacity through our Restormel water treatment works. This investment comes on top of the current period investment in new water sources at Hawks Tor, Blackpool Pit and our South Cornwall desalination plant which will by 2025 have given us new resources equivalent to 45% annual average demand at our Restormel Water Treatment Works.

£7.1m

Supply in Roadford

Providing 1 in 500 year drought resilience and investing to dual existing mains at Littlehempston to provide additional 4 million litres a day resource by 2035/36. This, too, is in addition to our current period investment in new water sources at the River Lyd and Gatherley which will by 2025 have given us new resources equivalent to 30% annual average demand in our Roadford zone.

£53.2m

Supply in Wimbleball

Providing 1 in 500 year drought resilience and investing to mitigate the impacts of licence reductions through Whitecross distribution upgrade (enabling Pynes Water Treatment Works to provide additional water to East Devon) and commencing construction of the new Cheddar 2 reservoir.

£3m

Water Efficiency

Delivering a range of water efficiency initiatives to help household and non-household customers be more efficient in their water use.

Our future plan to 2050 – water resilience

Find out more here

Our Strategic Direction to 2050

South West Water Water Resources Management Plan

Find out more here

Bristol Water Water Resources Management Plan

Not having enough water in the future is not only a threat to the customers we serve, but also to the environment and to the economy of the South West.

Our plans show that if we do nothing, there will be a gap of nearly 200 million litres per day by 2050. Whilst reducing demand is our primary course of action, this does not completely close the gap across all our supply zones. We must work in harmony with our catchments to secure resilient supplies into the future and to protect our lifestyles and the places that we love.

Resilient water resources

Steps to help people use less and to waste less ourselves – PCC to 110 l/p/d and leakage reduced by 50% by 2050

Less reliance on potable water for non-consumptive purposes

Boosted capture and storage of rainfall responding to seasonal changes, with increases in reservoirs for people and for protecting the environment

More non-river sources – such as desalination and re-use; and rainwater harvesting in new builds by default as a legal requirement (widespread retrofitting in the same way that solar panels have).

We're doing this

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This document is available in different formats.

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