

November 2022

Draft Water Resources Management Plan 2025-2080

Customer summary

bristolwater.co.uk



About this document

This document is a non-technical summary of Bristol Water's draft Water Resources Management Plan (WRMP), our long-term plan to balance the needs of water resource management in our supply area until 2080.

Water is essential for life and it's a precious resource. It takes a lot of infrastructure, storage and treatment to make sure that it is safe to drink and available when and where we need it. We also need to look after our rivers, so after we have taken what we need, there is enough water left for a thriving environment. That's why we believe every drip we stop and every drop saved makes a big difference.

Balancing the needs of people and the environment requires a long-term focus to predict future trends in rainfall, together with the level of customer demand and plan ahead for these. Every five years we update our WRMP to take account of the latest information and adapt our plans accordingly.

Our draft Water Resources Management Plan sets out how Bristol Water will make sure there is a secure supply of water to customers in the future while also protecting and enhancing the environment.

This document sits alongside our [drought plan](#) which sets out how we will manage our resources during a drought and will form part of our updated business plan when this is published in October 2023.

We would love to hear what you think. If you'd like more details, this can be found at www.bristolwater.co.uk/water-resources-plan. We'd welcome comments before our consultation closes on Friday 17 February 2023.



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Foreword by Susan Davy

Group Chief Executive Officer

I'm pleased to share our draft Water Resources Management Plan.

Our aim in publishing this draft plan is to set out how we will evolve our water resources so that future generations can depend on them. Our plan will:

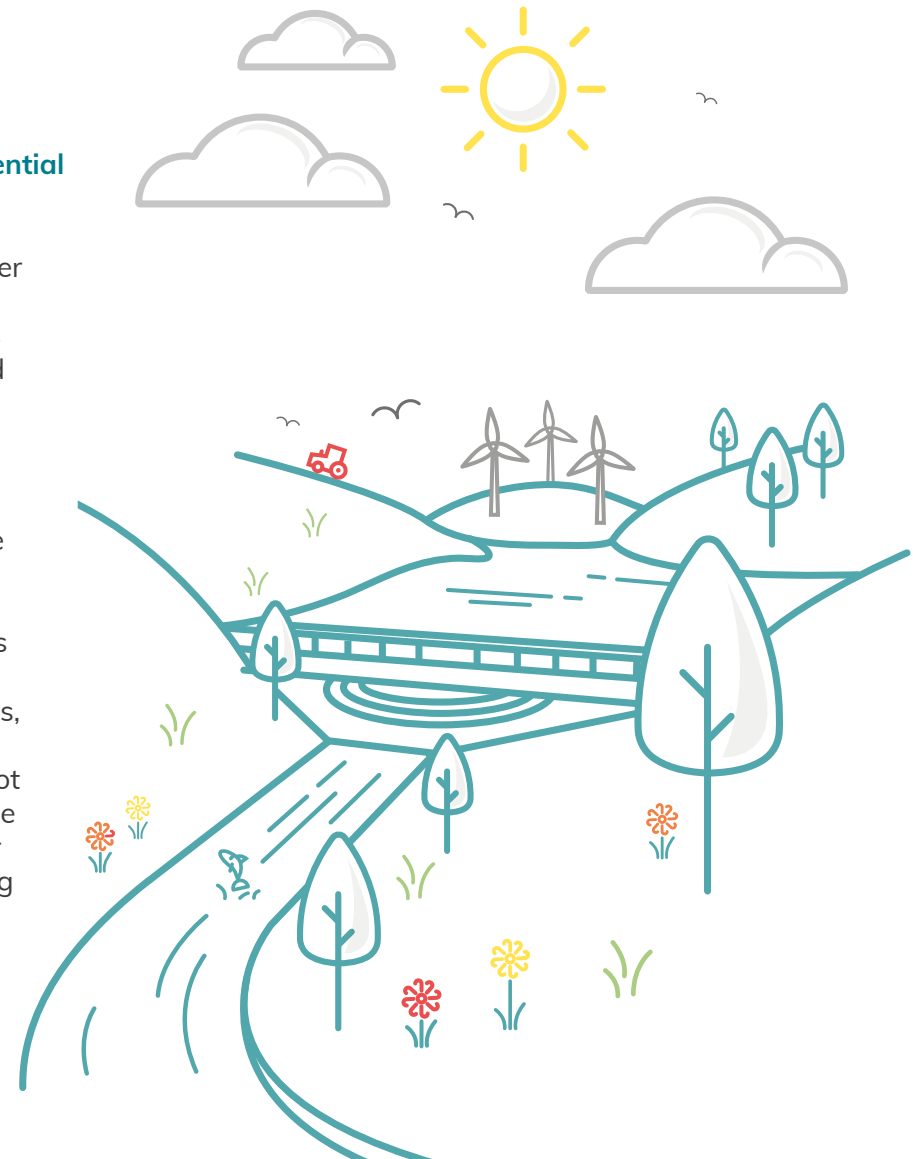
- Protect people, homes and businesses from the impacts of climate change and increasingly hot and dry summers
- Protect rivers and reservoirs, and the wildlife that depends on healthy water levels
- Support the long-term economic health of the region
- Maximise the value of water as a precious resource.

The role of responsible business is one of stewardship for sustainable living. What we do and how we do it is driven by our purpose – supporting the lives of people and the places they love for generations to come. We take in rainfall, store it to treat it to make it safe for all, and distribute to customers and businesses across the region. Along the way we ensure that water continues to provide healthy habitats for wildlife and recreational spaces for communities.

Managing this precious resource is essential for hygiene, health and recreation.

We operate across a unique region. Water is vital to the environment, be it coasts, rivers, reservoirs or lakes. Bristol Water's reservoirs are important to residents and visitors (both human and wildlife!) for health and recreation.

But our region is changing. The South West is particularly vulnerable to climate change. By 2050, summers in the South West will be on average 2-3 degrees warmer than today, with at least 20 days a year of extreme heat. The drought of 2022 has been devastating for river flows, groundwater levels and reservoir stocks, yet by 2050 the chance of summers as hot as 2022 will increase to 50%. At the same time, population growth means a further 230,000 people will be living and working in the Bristol Water area, increasing the need for water.



Foreword by Susan Davy (cont.)

Group Chief Executive Officer

From this, one thing is clear - whether you are a customer, a business, a farmer, or a water company - water resources will become stretched with competing priorities. There is a clear need to act in our water resources plans.

We are determined to make the South West resilient to the increased risks of drought, to support sustainable, economic and tourism growth, and to protect our environment, whilst reducing our carbon footprint.

Our work to date sets out the need to transform the way we all use water, as we adopt new ways of working, focus on sustainable operations and decarbonisation, think innovatively, and empower customers to make informed decisions around water use.

This means investing in new reservoirs, and for the first time ever - working with other water companies to share resources. For example, in the Mendip Hills there are quarries and pits that are well suited to be used for raw water storage.

Cheddar is also a well-established site for a second reservoir that could now be used

to increase resilience of water resources across the entire region. And with increased interconnections and reduced leakage, we can make sure that we share this water around the region, with customers and businesses protected from changing weather patterns and growth.

There are other supply options in the long-run that could see us invest in water recycling. Today, most of the water we all use, along with rainwater that lands on our roofs and driveways, all ends up going down the drain and into the sea. We could introduce recycling schemes to retain and recycle this water that would otherwise flow into the sea.

We will do our bit to make homes fit for the challenge, to support government targets to reduce leakage by 50% and reduce consumption by a quarter by 2050.

Homes need to be able to recycle water, using more water butts and rainwater harvesting systems. Smart meters for all will help homes to manage water use and will identify the leakage on customer properties, which currently accounts for over one third of all leaks.

This will ensure homes are smarter and healthier in the future. Our draft plan focuses on reducing water demand as the first approach, but depending on the consultation on this plan and other plans across the South West region, we will revisit the option to include new supply schemes, such as a second reservoir at Cheddar and water recycling schemes.

Overall, we want to make sure that this draft water resources plan delivers for everyone, and it is one that future generations can be proud of. Please do take this opportunity to respond to this draft version, and have your say.



Susan Davy
Group Chief Executive Officer

Our priorities for the future

Having an overall strategic approach and vision for the next 25 years is essential as a basis on which we can co-create plans for a sustainable future for our region.



Nurturing the environment

Protecting river flows and wildlife in rivers and reservoirs.

Ensuring water resources for all needs

Providing water for homes, businesses and the environment. Reducing demand will be our first priority - we will go even further in reducing leakage and support customers to find and fix any leaks on their pipes. We will also help customers to use water mindfully.

Recycling and reuse

We will work with others to encourage greater use of rainwater, as well as recycling and re-use of water used in the home. For example, through home improvement grants



that will allow properties to harvest rainwater or store bathwater, reducing the need for using treated water in the garden and other uses such as washing cars.

A resilient infrastructure

We are committed to resilient infrastructure, capable of meeting the challenge of climate change, boosted by decarbonisation of our operations and investments.



Working with customers & stakeholders

We will work to boost active participation of our customers and communities to help us understand and address their needs, as well as working with local partners to deliver our shared objectives for people and the environment.



Our supply area

We supply drinking water to a population of approximately 1.2 million people across an area of 2,400 square kilometres in the south west of England.

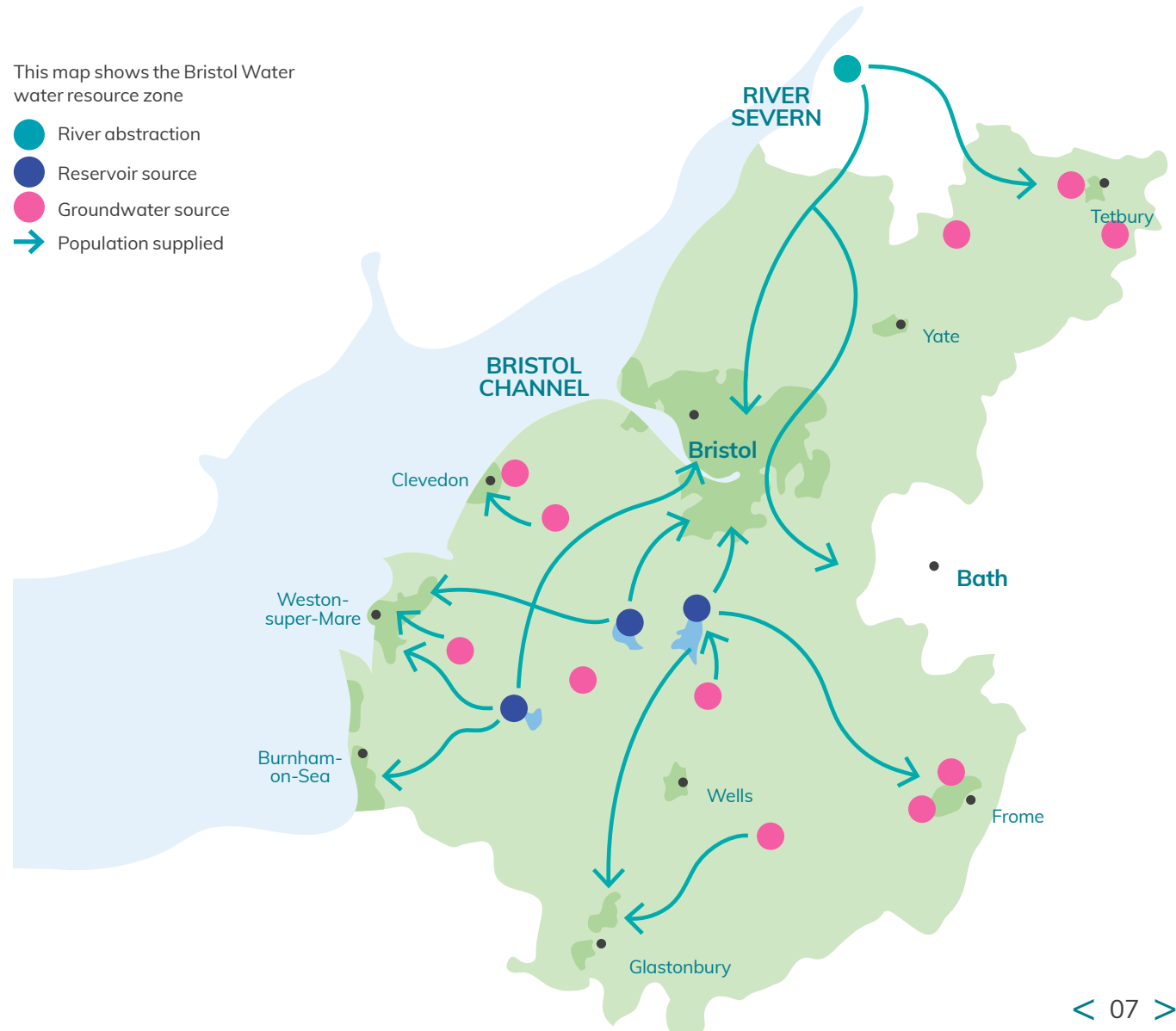
Our supply area is centred on the city of Bristol and the towns and villages within a 40km radius of the city. The area stretches from Thornbury and Tetbury in the north, to Street and Glastonbury in the south, and from Weston-Super-Mare in the west to Frome in the east.

We rely on 68 water sources, including reservoirs, rivers, springs, wells and boreholes. About 90% of the water supply comprises surface waters. Water resources within the Bristol Water supply area alone are not sufficient to meet customer demand for water and 46% of the water supplied within the Bristol Water supply area is sourced from the River Severn via the Gloucester and Sharpness Canal. The Mendip reservoirs and associated surface water abstractions account for approximately 42% of our water supply. The remaining 12% is supplied by groundwater.

Wessex Water provides the wastewater services in our area. A number of water supply transfers are made between ourselves and Wessex Water.

This map shows the Bristol Water water resource zone

- River abstraction
- Reservoir source
- Groundwater source
- ➔ Population supplied



Trends and challenges in a changing world

Climate and population trends are shifting. The UK is getting drier, and the challenges of managing our water resources are changing as we reach for higher standards in caring for the environment.

Water supply is an essential service. It supports our daily lives, the economy, and our health and wellbeing. It is also essential for the health of the environment and getting the right balance between different demands for water is important for our future.

Bristol Water has provided safe, clean and affordable drinking water to Bristol and surrounding communities for the last 176 years. We carefully utilise a range of different sources to balance the impact on river flows and provide resilience during times of drought.

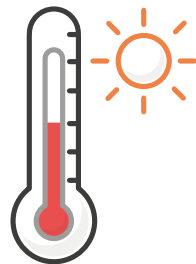
Over the next 25 years, we will all face increasing pressures. The UK is getting drier, and the challenges of managing our water resources are changing as we reach for higher standards in caring for the environment.

The prolonged dry spell of Summer 2022 brought these challenges to the front of public consciousness. We are taking this new information into account as we seek to understand how the climate is changing and what this means for the security of future water supplies, so that we leave the environment better than we found it.

Future trends

Climate change shows the region will be hotter

By 2050...



Average daily temperatures could increase up to 18°C.

AN INCREASE OF 2.2°C.



Average summer daily temperatures could increase to 23°C.

AN INCREASE OF 3°C.

We can expect much drier summers



Rainfall in the region **WILL BECOME MUCH MORE**

variable

Trends and challenges in a changing world

Climate change

While the amount of rain we receive is more plentiful than many parts of the UK, we know this will become more concentrated to just a few months of the year, and it will be more intensive.

There will be more summers like 2022, putting pressure on our resources. Hotter, drier summers will mean more water is lost through evaporation.

Population growth

By 2050 we expect there to be 116,000 new homes in our area, with 230,000 extra people. The increased population will also require more land for crop production and livestock, and more irrigation.

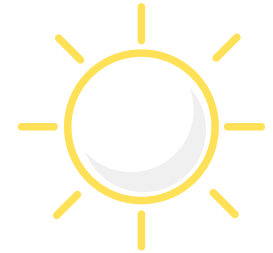
Rising expectations

Our plan reflects a greater value being placed on our natural environment and the diversity of life it sustains. Our understanding of the environment and our effect on it is constantly being improved. This means meeting more stringent targets to minimise the effects of human water use and working in harmony with nature.

Our customers have told us that taking the lead on environmental matters is a priority and that we need to work hard to ensure water restrictions are not required in future.

National policy

The Government has set challenging targets within its 25 year plan to 2050 that sets out how to improve the environment for future generations. This means water companies must reduce leakage by half and work with customers to cut how much water each person uses in a day (also known as 'per capita consumption') by a quarter.



Additionally we must secure water supplies against more severe drought scenarios. Previously, our resilience level was for the severity of drought that is only statistically likely every 200 years (for Bristol Water WRMP19). Now we must prepare for a 1-in-500 year drought.

We are committed to achieving the net-zero carbon emissions within the timeframes set out by Government. We must work to co-ordinate our planning on the wider regional levels and develop plans that are coherent with the work of other water and infrastructure companies.



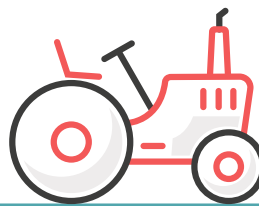
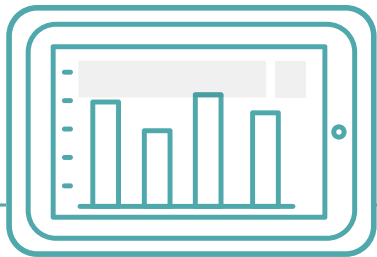
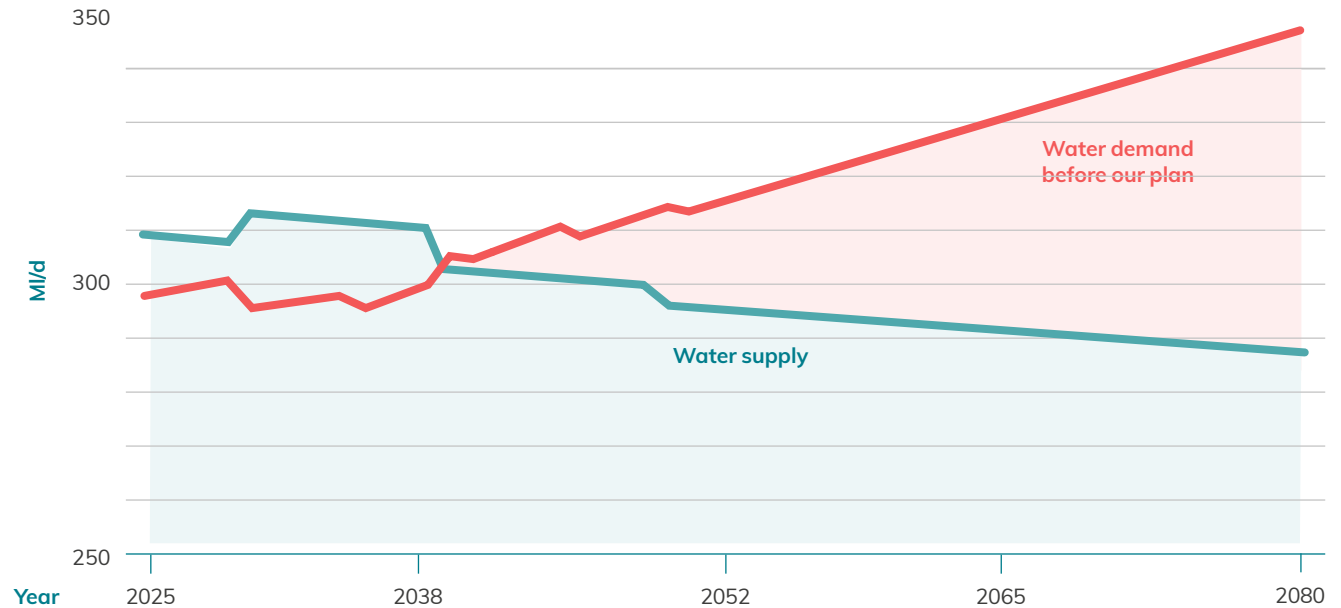
What this means for us

The trends and challenges we have outlined have immediate and far-reaching effects our water resources management strategy.

The bottom line is that there will be less water available over time, and we will have to take less of it from the environment. There will be an increased demand for water due to a hotter climate, increased population, and the need to support higher demand in other sectors such as agriculture. Increased demand puts pressure on our system and multiplies the effect of leakage.

If we do nothing, there will not be enough water for everyone in the future. We forecast that there would be a water deficit in around 2038, which grows to around 54 million litres per day by 2080.

Baseline supply demand balance



54
Million litres
per day deficit
by 2080

Creating our plan in partnership

We are in ongoing conversations with our customers and all those who are affected by the decisions we take on managing water resources, how we invest and when, and how we carry out our plans.

We have listened by asking customers about their priorities and conducting focus groups, as well as discussions and workshops with organisations such as environmental NGOs, local and national policy makers and consumer groups. We will keep on listening and testing how acceptable the best value options are throughout the development and delivery of the Water Resources Management Plan.

Here's a summary of some of the priorities our customers have told us about:

Reliability: Customers still value a safe and reliable supply of water as their top priority for us to focus on. They are consistently highly satisfied with water quality and how reliable their service is.

Highly satisfied with water
quality & reliable service

Leakage: Our performance is ranked in the top five customer priorities for household customers, and we're considered to be performing well in this area. Customers have told us that leakage reduction is a top priority in the context of it being a core area of responsibility for Bristol Water.

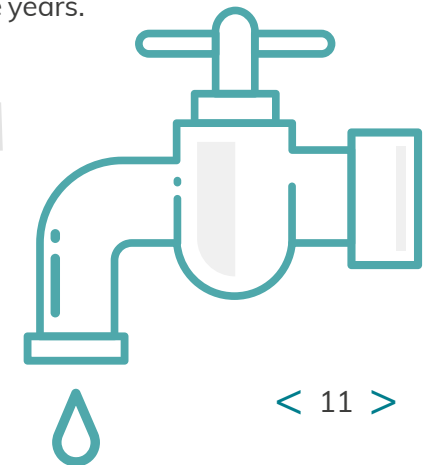
Water efficiency: Our household customers have indicated a strong preference for support on water efficiency. Most household customers try to actively manage and reduce their water usage at home. In contrast, over half of non-household participants stated that their business would struggle to use less water. They all perceive water use restrictions as difficult to cope with and generally unacceptable.

Reducing carbon
impact is important



Water restrictions
are unacceptable

Cutting leakage
is a top priority



Metering: Our customers have mixed views on metering. Some are strongly in favour and others are concerned that it would lead to higher bills and the effects this would have on those already struggling with bills. Respondents told us we should be doing more to educate customers on the benefits of water meters and incentivise voluntarily installations.

The environment: Customers are generally content with the current level of service that they receive and therefore favour investment in the environment as a priority for the future. They often identify actions that could support Bristol Water's environmental credentials, such as more water meters and involvement in wider environmental protection initiatives. Overall, views on our role in protecting and enhancing the environment have strengthened over the past five years.

Creating our plan in partnership

Water resources and greenhouse gas emissions:

Protecting river flows, enhancing biodiversity and reducing our carbon impact are seen to be an important part of our role by the majority of customers.

Resilience: Customers consistently place resilience as a high priority since water use-restrictions are difficult to cope with.

Affordability: In general customers find bill affordability a very high priority and are mostly satisfied with value for money. The importance of affordability has remained consistent over the last five years, although views on value for money are generally more favourable now.

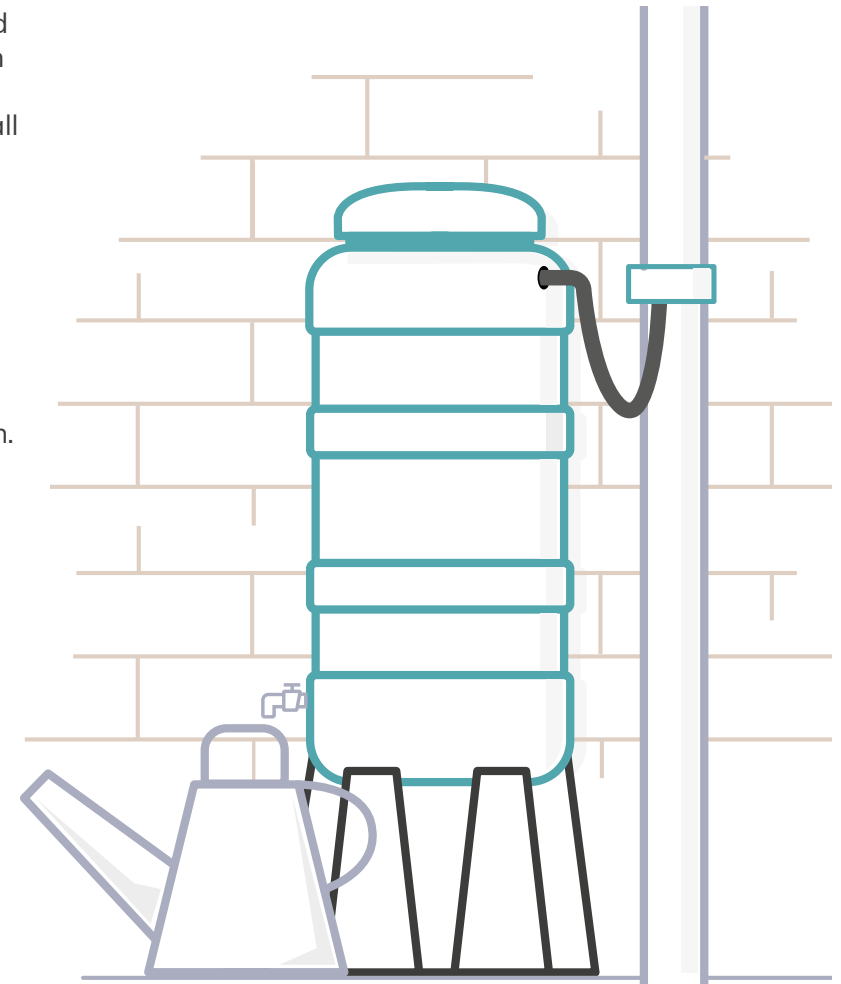


Non household customers and other stakeholders have told us:

- We could do more to help them understand how to use less water and to assist them in doing this.
- We should lead by example and be doing all we can to fix leaks and preserve supplies.
- Rainwater collection and the recycling of effluent are good ideas and is likely to be where the focus should be in the future.
- Smart metering and visits to help identify leaks benefit businesses directly as well as saving water.
- Behaviour change is likely to need some form of incentivisation and greater education.
- A collaborative approach is strongly supported across all the main stakeholder groups.

A wide network of partnership

As members of the West Country Water Resources Group, we are part of an alliance of suppliers and stakeholder organisations covering the wider regions that surround our supply areas. Here we are collaborating on research and strategic planning of our water resources.



Progress since we published our last plan

Since we published our last Water Resources Management Plan we have reduced leakage by 8 million litres per day and by almost 20%. We now have among the lowest levels of leakage in the country.

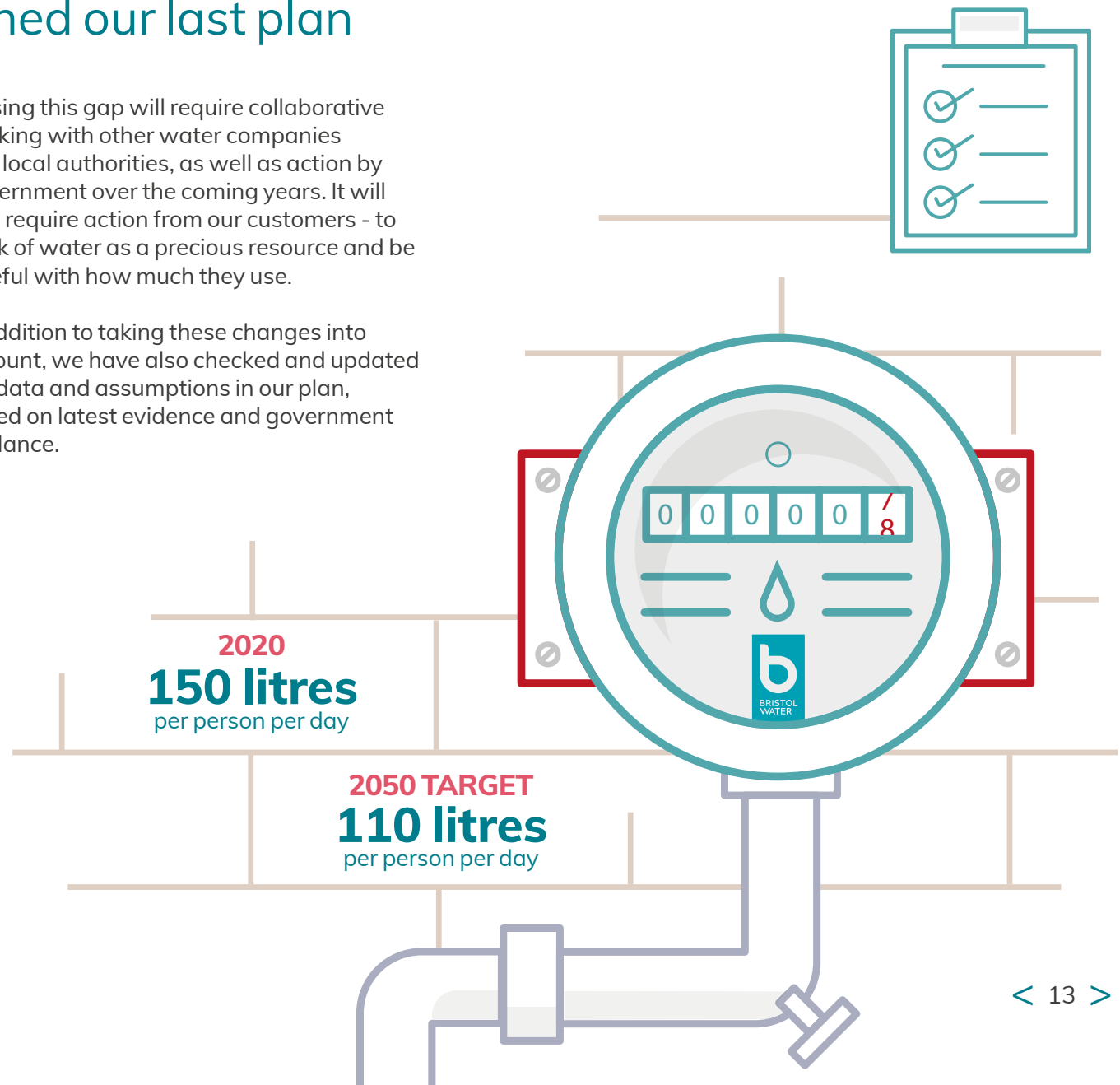
We have installed 60,000 new water meters, heavily promoting their benefits to encourage our customers to request a meter. We're also metering properties as ownership changes. A total of 63% of households now have a water meter.

The Covid-19 pandemic has changed the way that we all work and live. One impact of this is that the amount of water people use at home has increased. We saw an increase of 20% during the pandemic and home usage has remained higher than pre-pandemic levels, as people continue to take advantage of home and hybrid working.

Whilst this has little impact on the overall amount of water used, it does mean our calculations of the amount of water used per person in the home have increased to around 150 litres per person per day. This leaves a considerable gap if we are to hit the Government target of 110 litres per person per day by 2050.

Closing this gap will require collaborative working with other water companies and local authorities, as well as action by Government over the coming years. It will also require action from our customers - to think of water as a precious resource and be careful with how much they use.

In addition to taking these changes into account, we have also checked and updated the data and assumptions in our plan, based on latest evidence and government guidance.



Our roadmap to a resilient future

We have developed an ambitious plan to make sure there is enough water for people and our rivers in the future which is based on reducing demand to offset the impact of population growth and reductions in forecast supply.

This ambitious plan is to reduce leakage by a further 30% by 2050 (from 2017 levels) whilst also achieving a 25% reduction in household water consumption over this time period. This goes much further than our previous plan.

We will need customers to work with us to help achieve these targets. If we are successful, no further resources will be required in our supply area. We will need to keep our plans flexible however and respond to changing weather patterns and the levels of demand reduction which we are able to achieve. We'll also be talking to customers some more about the relative costs and benefits of different plans.

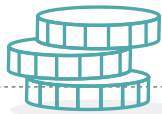
By 2050:

£1bn of investment

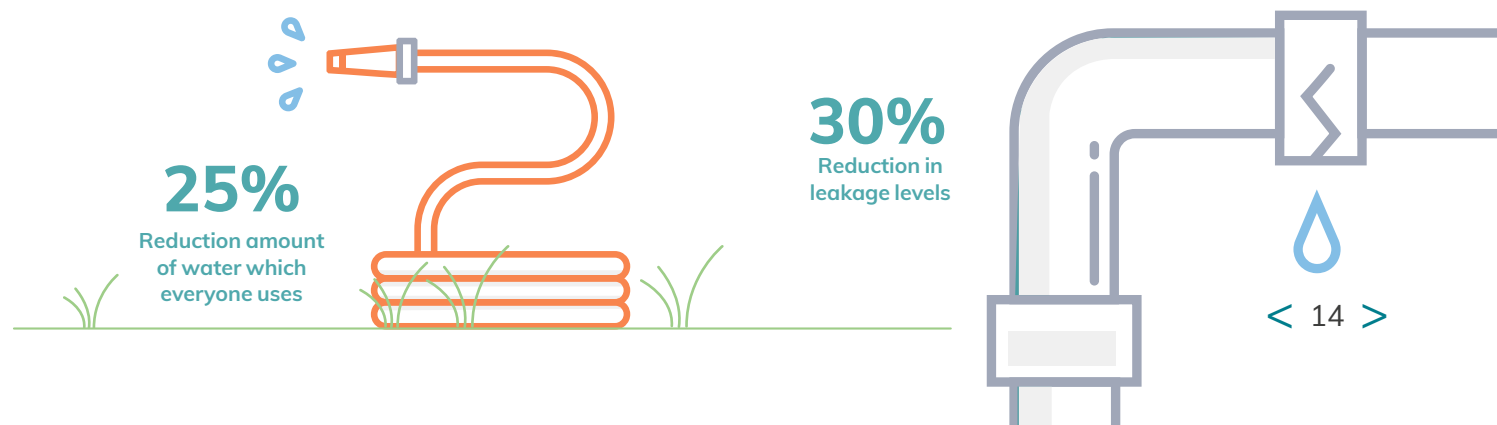
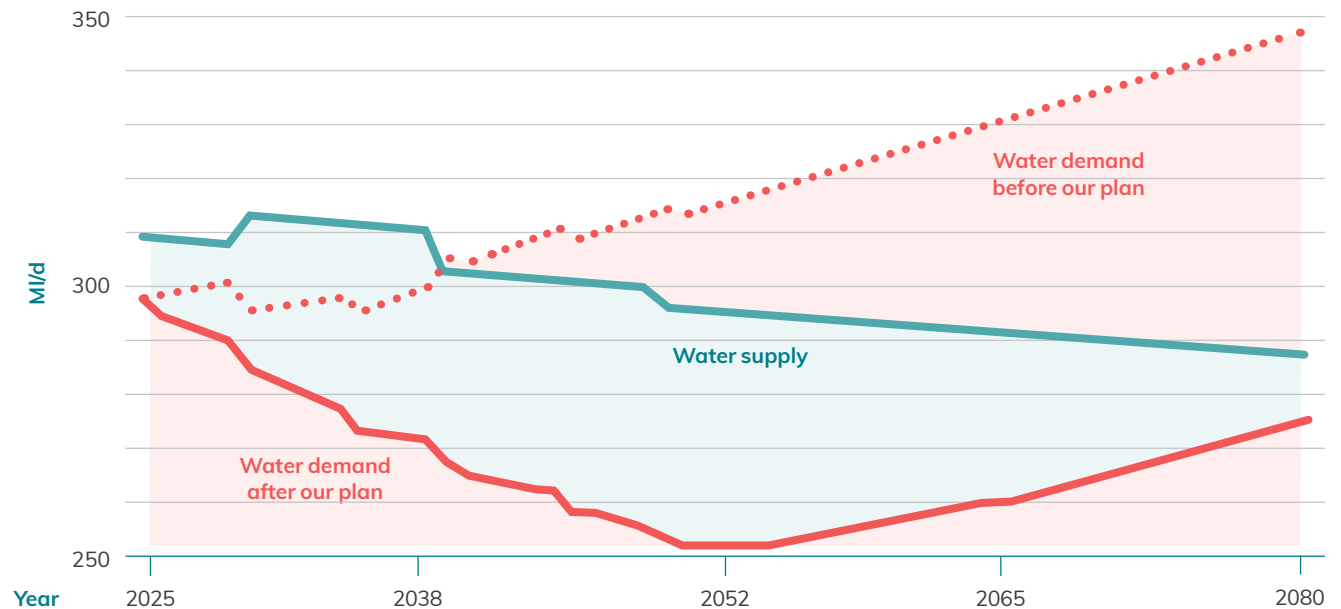
840,000 new water meters

40 Million litre per day customer demand saving

10 Million litre per day leakage saving



Baseline supply demand balance - preferred scenario



How we will deliver this

Preventing and fixing leaks

We already have the lowest levels of leakage in the country. We plan to go even further by:

- Resourcing and training our teams to respond quickly and effectively to reports of leaks
- Using technology to predict and detect leaks
- Proactively replacing or repairing older installations that are more likely to deteriorate
- Supporting customers and businesses to reduce leaks on their properties.

Installing smart meters

Our customers will need to be more mindful of how they use water and avoid wasting it. To help with this, we plan to roll out a universal programme of smart metering over the next 15 years. This will mean every customer has ready access to information on their water usage.

There are many types of smart meter, but they all measure how much water is flowing through a pipe and allow it to be monitored closely. A smart meter may be installed on a particular section of our network, such as a street, as well as individual households having a meter installed that tells them how much water they are using.

We can use this information to build a complete picture of where water is going, and where efficiency could be improved. Smart meters in households help people to be aware of how much water they are using (and therefore use less). They can also be linked to billing so customers only pay for the water they use.

With real-time information on water consumption, we can provide feedback to our customers on water consumption, locate leaks and improve our ability to manage our water supply systems overall.



How we will deliver this



Promoting community water efficiency

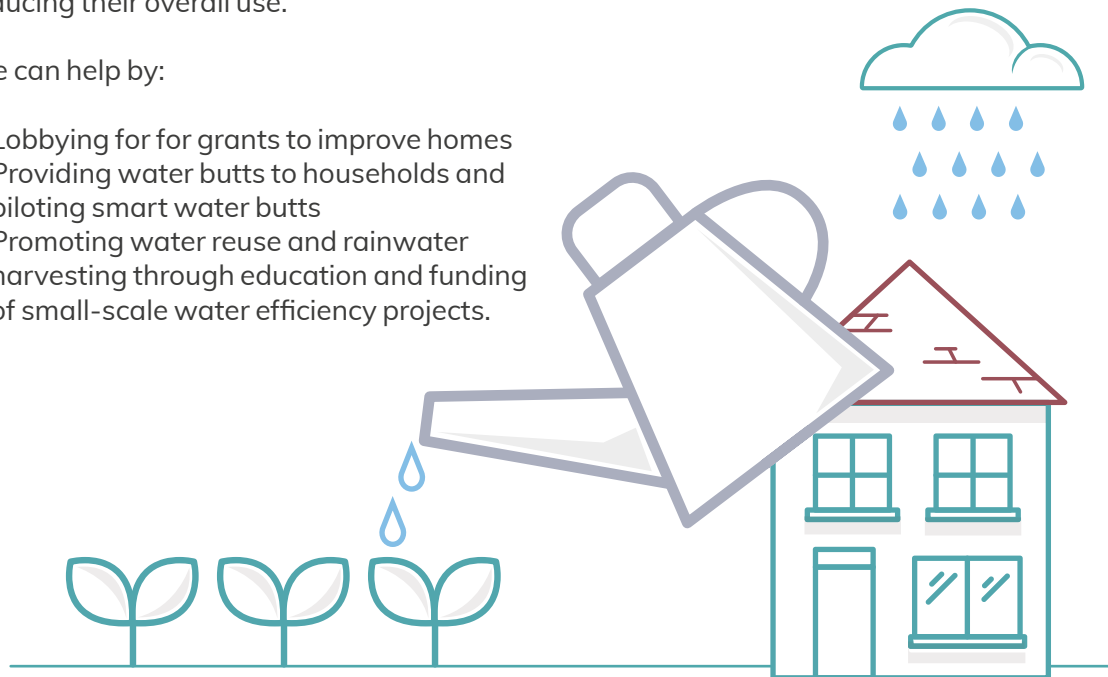
We'll also need to collectively rethink about how we use water – making more use of rainwater for things like watering the garden and washing the car.

While we are asking customers to use less water, we are also committed to supporting them to recycle more water at the household level. They will benefit from lower bills while reducing their overall use.

We can help by:

- Lobbying for grants to improve homes
- Providing water butts to households and piloting smart water butts
- Promoting water reuse and rainwater harvesting through education and funding of small-scale water efficiency projects.

To deliver this future resilience sustainably, we will need to continue our partnership working. For example, with local planners in relation to infrastructure and net zero strategies. We will also need policy changes from Government. For example, mandatory water efficiency labelling for household appliances and tougher standards for new developments.



New strategic water resources

If we can reduce the amount of water we use by around a quarter, to an average of 110 litres per person per day, as well as reducing leakage by a further 30%, our calculations suggest that we will not need further water resources in the Bristol region.

However, this demand management strategy carries risk as it is not entirely within our control. We are relying on policy changes from regulators to encourage water efficient homes and appliances, as well as behavioural changes from our customers.

We will monitor demand and consider an alternative plan if levels are not falling as quickly as required.

We also continue to work with our neighbours to develop a water resource plan for the West Country as a whole. This regional plan requires significant new resources to be developed to ensure everyone can continue to have a reliable supply of water in the future.

A review of all the possible options is in progress and may conclude a new reservoir within the Bristol region is the best solution for the region.

We will update our final Water Resources Management Plan for the conclusion of this work.



Public consultation

We would love to hear your feedback on our draft plan. We are carrying out a public consultation on the draft Water Resources Management Plan for 12 weeks from Monday 28 November 2022 to Friday 17 February 2023.

We will reply to feedback we receive through our Statement of Response (this is a formal document we must publish as part of our water resource planning).

Some questions to consider are:

Do you think there might be something missing from our plan that we need to consider?

What do you think about the balance of demand management over new resource options?

Are there any particular risks or opportunities which we should consider in our plan?

All responses to this consultation should be sent to the Secretary of State for the Department for Environment, Food and Rural Affairs (Defra).



You can respond by e-mail to
water.resources@defra.gov.uk

Please carbon copy (cc)
water.resources@bristolwater.co.uk.
Please title your e-mail 'Bristol Water
WRMP Consultation'.

You can respond by letter to
Secretary of State,
Water Resources Management
Plan Water Services,
Department for Environment,
Food and Rural Affairs (Defra)
Seacole 3rd Floor
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