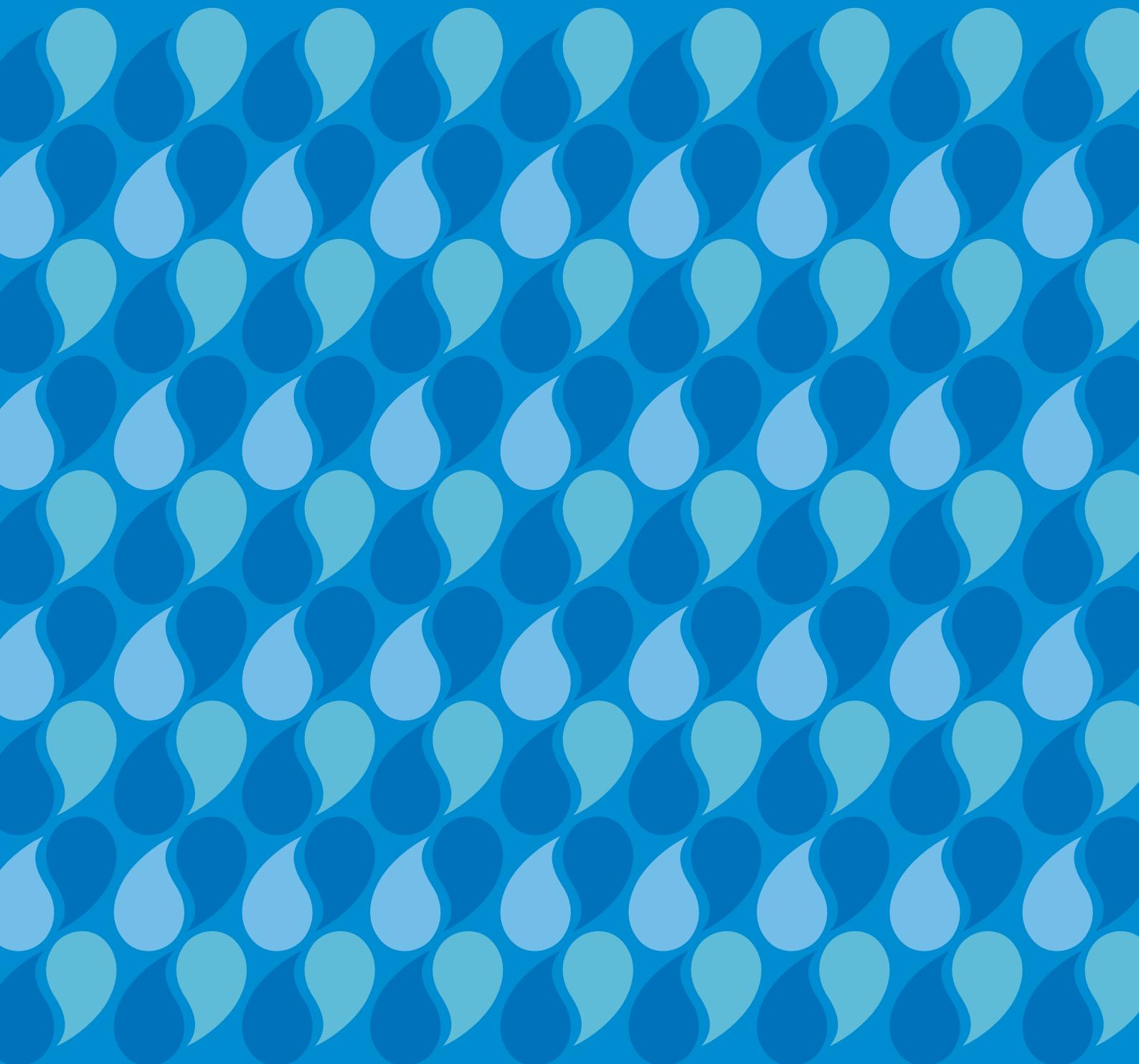


Revised draft Water Resources Management Plan 2019

CUSTOMER AND STAKEHOLDER SUMMARY



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SUMMARY

INTRODUCTION

WATER IS OUR BUSINESS, WE HANDLE WITH CARE AND WE DON'T COST THE EARTH.

THESE ARE THE WORDS WE LIVE BY DAILY. OUR CUSTOMERS ARE AT THE HEART OF OUR BUSINESS. IN 2017-18 WE WERE RANKED NUMBER ONE FOR CUSTOMER SERVICE BY THE CONSUMER COUNCIL FOR WATER.

SCALE OF THE CHALLENGE

As a region and as a water company we face a time of great uncertainty and change. We face four pressing and interlinked challenges – climate change, environmental protection, population growth and the risk of drought. We have to act now or we will move from a strong position of a surplus of 144 million litres of water daily to a deficit of 32 million litres daily by 2025.



OUR RESPONSE

Every five years we write our Water Resource Management Plan (WRMP) which sets out how we will manage the water supplies in our region to meet current and future needs over a minimum of 25 years.

Our revised draft 2019 WRMP considers our challenges from every angle. We have developed it looking at a range of timescales and with reference to the latest thinking and expert guidance. We have allowed room to cope with potential changes to laws, quality standards and levels of demand and our ability to withstand drought. Crucially, we have listened to 45,000 customer views which have informed our decisions.

This revised plan aligns with our Business Plan for 2020-2025 which sets out the clear business case for investment. Based on our Plan customer bills will increase by less than 1% but will see nearly 30% more investment than ever before. This will mean customers can look forward to the future with confidence.



OUR FOUR CHALLENGES

1 Climate change

The East of England is one of the driest in the country receiving on average only two thirds of the national average rainfall. The region is classified as under severe water stress. In parts of our region there is already not enough water to meet demand. Climate change projections suggest that in the future there will be lower summer rainfall and hotter temperatures which means greater loss through evaporation too, so water below ground can't be topped up as easily. Our area will also be prone to more intense downpours which risks washing more fertilisers and pesticides from the fields into the rivers.

2 Environmental protection

We have to make sure that taking water out of the rivers or from underground to feed our water network can be maintained and does not cause actual or potential environmental harm. Between 2020 and 2025, we will implement 'sustainability reductions', relinquishing our abstraction rights in sensitive areas by 84 million litres daily. It is a privilege to manage water resources for an area famed for its natural beauty and which boasts 100 areas that need protection. But it places a special responsibility to do the right thing to cherish and protect this precious resource and environment.

3 Population growth

At the same time as the climate is changing and environmental rules are tightening, our region is one of the fastest growing in the UK. A 20% increase in population is predicted over the next 25 years. This will create an increased demand of 109 million litres daily.

4 Drought

Since the last drought of 2011-12 we have been investing to address the most vulnerable parts of our system, to minimise the risk of standpipes and rota cuts in the event of severe drought. But there is still more work to do. We agree with our customers that no one should experience these restrictions in a severe drought. Increasing our ability to cope with drought means that we need to secure an extra 26 million litres of water per day.

OUR PREFERRED PLAN

Our Preferred Plan tackles these four challenges head on via a twin-track approach. We will focus on the demand side first and reduce the amount of water used. But we will also invest in the supply-side to increase the amount of water available.

Our plan is built upon our longstanding guiding principles to develop a system of water supply that is reliable, sustainable and affordable.





OUR PREFERRED PLAN

Demand management is our priority:

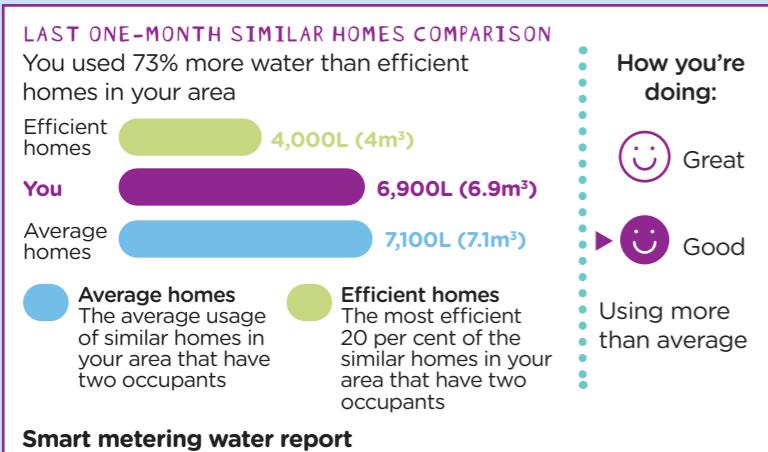
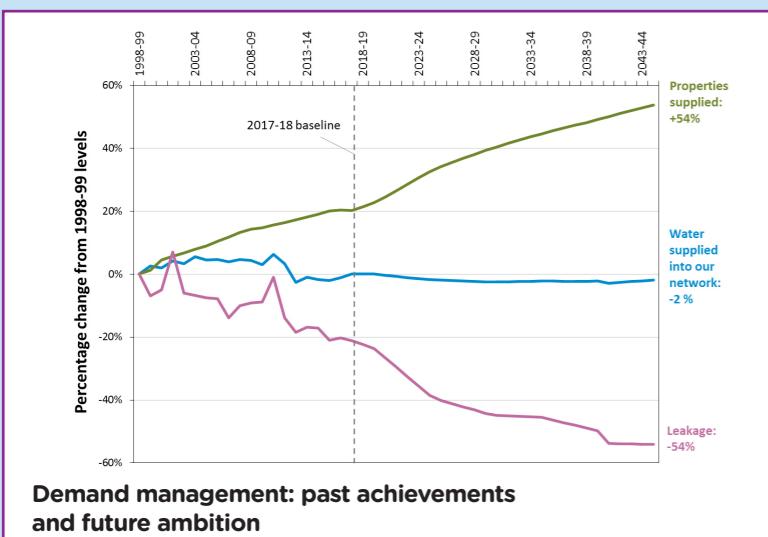
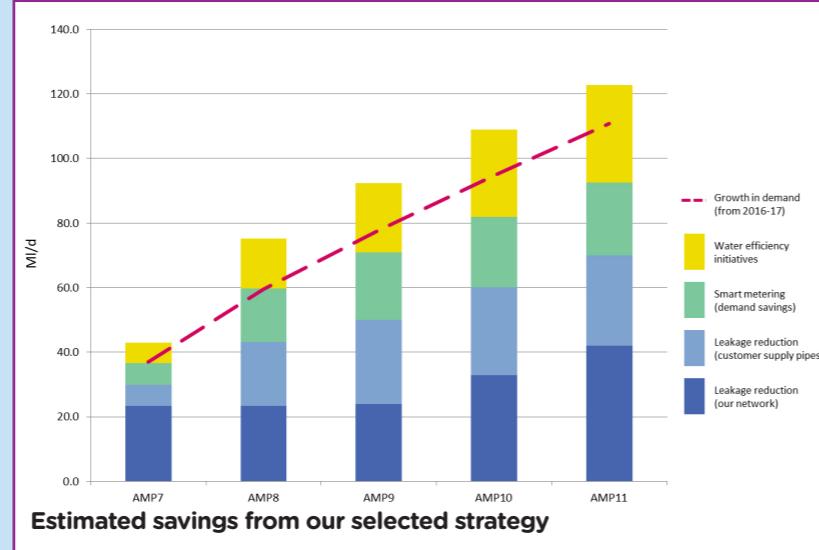
- Managing demand and reducing leakage is a customer, government and regulatory priority
- It saves water that would otherwise be abstracted from the environment, treated and pumped through our network
- It is required to ensure the reliability, sustainability and affordability of water resources over the long-term.

We have developed an ambitious, cost beneficial demand management strategy that will more than offset the effects of growth.

Total estimated demand savings of up to 43 Ml/d by the end of AMP7 (2020-25), and 123 Ml/d by the end of the planning period (2045).

Our strategy consists of:

- Leakage reduction (including 23% decrease by 2025 and 42% decrease by 2045)
- Installing smart meters across our region in order to encourage and enable changes in customer usage
- Innovative water efficiency schemes including behavioural change initiatives.



DESPITE OUR AMBITIOUS DEMAND MANAGEMENT STRATEGY, THE SCALE OF THE CHALLENGE IS SUCH THAT WE STILL NEED CAREFULLY TARGETED INVESTMENT IN SUPPLY-SIDE CAPACITY.

We will invest in a series of interconnecting pipes to better join up our network and maximise the use of existing surpluses in AMP7 (2020-2025). This ensures we will make best use of available resources before developing new ones. The only new resource scheme we need to develop in the short-term is Pyewipe Water Reuse for non-potable use. In the medium- to long-term, we are likely to need additional resources.

This could include winter storage, recirculation of recycled water, or desalination. We will be working with regional stakeholders and neighbouring water companies over the next two to three years to identify the best options to take forward to WRMP 2024.

There is no supply-demand deficit in Hartlepool and therefore no selection of supply-side options.



Our revised dWRMP is...

Reliable

- ✓ Resilient to severe drought, ensuring no customers would experience standpipes or rota cuts in a 1 in 200 year drought
- ✓ Adapting to climate change impacts from 2020

Sustainable

- ✓ Prioritises demand management
- ✓ Makes best use of existing resources
- ✓ Protects and enhances the environment
- ✓ Supports regional growth

Affordable

- ✓ Identifies the 'best value' solution to our region's challenges
- ✓ The majority of our customers think our plan is affordable and we offer a comprehensive package of support for those who struggle to pay their bills

DEMAND SIDE

Our first priority is always to look at the demand for water and see if we can reduce the amount of water used or lost through leaks. This approach is shared by our customers. Our Love Every Drop initiative has helped our customers and residents understand the true value of water.

To meet our demand management goals we have developed a three part plan. These are:

- Smart metering coupled with behavioural change
- Reducing leaks and
- Water efficiency initiatives

Smart metering

We believe there is great potential for smart metering to encourage customer engagement, making them part of the 'water saving' journey, and allowing us to produce a tailored service for our customers.

We plan to install the next generation of smart meters that will allow hourly consumption readings. This data is gold dust because we can analyse our customers' consumption patterns and help pinpoint leaks either from faulty supply pipes or faulty plumbing. In just one day a faulty toilet can lose 500 litres of water.

Benefits

- By the end of 2025 these measures will lead to a demand saving of seven million litres daily and a further seven million litres daily from fixing leaking pipes.
- By 2045, we estimate that the next generation of smart meter will give demand savings of 22 million litres daily and another 28 million litres daily from the identification of fixing supply pipe leaks.



SUPPLY SIDE

- We predict that this collective effort in water efficiency will give a saving of seven million litres daily by 2025 and 30 million litres daily by 2045.

- These figures translate to an individual consumption level of 120 litres per person per day by 2045. This will be one of the lowest levels of water use in England and Wales.

Reducing leaks

We are industry leaders in our ability to reduce leaks but we want to do more. We will use a mix of tried and tested techniques and new innovations in technology to build on our effort to date.

Benefits

- By 2025 we aim to reduce leaks to 142 million litres daily, a reduction of 22%.
- By 2045 we plan to reduce our leaks to 106 million litres daily, a reduction of 42%.

Additional water efficiency drives

We will extend our Bits and Bobs campaign where we retrofit homes with smart taps and other water saving devices free of charge and, the Potting Shed where we advise gardeners on ways to save water and install water butts to collect rainwater. We will also promote innovative ideas such as a water savings reward scheme and incentives to replace old toilets with more efficient models. We will work with property developers to trial greywater and rainwater harvesting schemes.

Benefits

- We predict that this collective effort in water efficiency will give a saving of seven million litres daily by 2025 and 30 million litres daily by 2045.
- These figures translate to an individual consumption level of 120 litres per person per day by 2045. This will be one of the lowest levels of water use in England and Wales.

Water transfers

By 2025 only three zones (East Lincolnshire, South Humber Bank and Hartlepool) will have more than a small surplus of water compared to 14 of our zones at the beginning of 2019. 14 of the 22 zones that will go into deficit can only be supplied by a water transfer. This is also generally the least cost option.

Our plan extends our network to connect our water supplies and move water more easily around the region. We will use the surplus water in Central and East Lincolnshire and North Fenland to supply Ruthamford, Bury Haverhill, East Suffolk and South Essex.

We will also develop new resources at South Humber Bank to supply the network. We aim to convert some of the non-drinking water at Elsham into drinking quality and develop a reuse scheme at Pyewipe to replace non-drinking water.

Benefits

- Extending our network gives us more scope to consider the new resources we will need in the future. We will work with neighbouring water companies to identify the best options to take forward in our updated plan of 2024.
- This network will provide extra resilience to help our region withstand the effects of severe drought and other extreme events such as freeze-thaw which occurred during the Beast from the East in February and March 2018.

Sustainability measures

Under tighter environmental protection laws we have to reduce the amount of water we can take out of rivers and reservoirs to feed our water network. We work closely with regulators to keep the balance between meeting our environmental responsibilities and maintaining the public water supply. We have agreed a new programme for some of the region's rivers where we will take out less water. These include River Lark, Nar, Catfield, Poulter and Bumpstead Brook. But in some cases we have agreed that we will not reduce the amount of water we take out if we pump in water to the river at times of low flow which will also benefit wildlife.

Conclusion

This plan future proofs the region against the extraordinary time of change and uncertainty ahead. By working closely with our customers our combined action will bring the water supply back into surplus. But we won't stop there. Our plan is a living document and will be the basis for the next phase of planning. In particular, we will be assessing the type of new resource schemes we may need in the future. We are confident that together we can meet the challenging times ahead.



INTRODUCTION

Who we are

We are the largest water and wastewater company in England and Wales by geographic area. Our region stretches from the Humber and Hartlepool in the North to Milton Keynes and Colchester in the South. We supply water services so more than five million customers can make a cup of tea, shower and enjoy their gardens. We work with a number of retailers who serve commercial customers and farmers. We work in partnership with conservationists to protect and maintain the natural beauty of our area, to keep our rivers flowing and make the most of our seven stunning water parks. Our region is home to the only wetland national park – the unique Norfolk Broads. Two million people visit one of our parks or recreational sites every year to fish, cycle, kayak or simply take a stroll and get back in touch with nature.

Our values

"Water is our business, we handle with care and we don't cost the earth". These are the words that we live by daily. Our customers are at the heart of our business. We listen closely to their views and involve them in our decision-making as we evolve our plans to meet their changing needs. We know that the actions we take can have a direct impact on their daily lives. At the same time we are fully aware that water is a precious resource and we must do all we can to manage it sensibly so that there is enough to go round and the region continues to flourish.

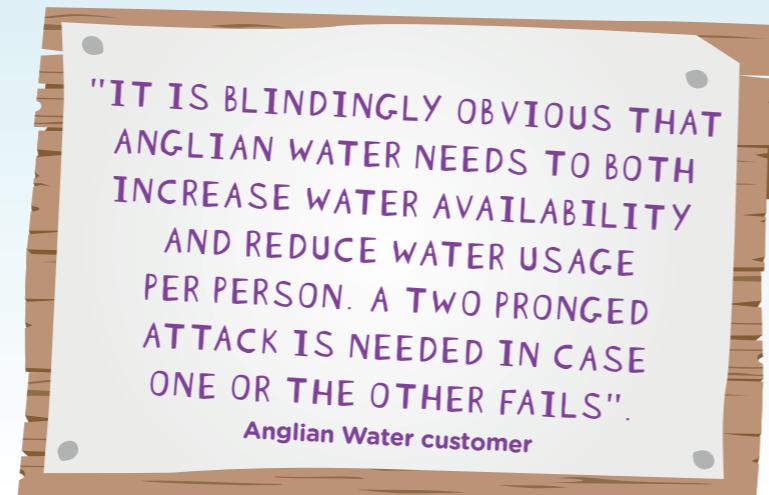
What is the WRMP?

By law we have to prepare and maintain a Water Resource Management Plan (WRMP). This plan sets out clearly how we will manage the water supplies in our region to meet the current and future needs of our customers over a minimum of 25 years. These plans are written every five years and submitted to our industry regulators, Ofwat, the Environment Agency and the Drinking Water Inspectorate so they can check that we are doing all we can to provide an affordable service to our customers whilst protecting and enhancing the natural environment.

We don't look at our own needs in isolation: our plans are informed by the innovative work we led on a multi-sector, long-term, collaborative approach to water resources through Water Resources East (WRE) and the views of the National Infrastructure Commission on future water needs. We share the focus of government, the Environment Agency and Ofwat on the need to continue to build resilient water supplies.

We published our draft 2019 WRMP in March 2018 with a three month consultation process for customers and stakeholders to give us feedback. We took time to listen carefully to some 45,000 customers' point of view. We held seven focus groups and ran a week-long festival in Norwich, to help visitors think about our water resource challenges and hear their views. We also engaged with our 500 strong online customer community so they understood the issues we had to weigh up carefully.

These collective views have directly informed the decisions we have taken as a company for the short term and the longer term. They have been central to the development of our Preferred Plan, which describes the solution we have chosen to make sure we can meet the extraordinary time of change and uncertainty ahead.



OUR APPROACH

As a region and as a water company we face four interlinked challenges which we explain in detail overleaf. These challenges are more pronounced here than almost anywhere else in the country, so we spent a long time talking to our customers about how to address them.

We wanted to see the challenges we face through the eyes of our customers and so we focused our conversation on three areas:

- Our plan for resilience which is our ability to withstand severe drought and on severe restrictions to their water supply e.g. standpipes and rota cuts. Remember the 2011-12 drought?
- Our choice of solutions – are we right to help reduce demand for water as well as invest in increasing the supply of water?
- Impact on bills – what are our customers willing to pay for?

These issues can be complex to understand. So we made sure that we tested the language and materials we used to communicate risk and simplified the concepts so our customers could have an informed discussion. We probed carefully around the options needed to improve the system's ability to withstand drought, how our current performance compares to other companies and the impact on customers' bills.

As well as gathering vital insight from our customers we developed our plan based on our longstanding guiding principles:

Is it reliable?

Is it sustainable?

Is it affordable?

For each of these principles we created specific aims that our new plan had to achieve.

In creating the Preferred Plan our in-house experts remained open-minded and nothing was ruled out too soon. On the water saving side we worked up three possible programmes with different degrees of ambition. All three were assessed for whether they represented value for money and were achievable within the timescale.

Initially we came up with more than 800 options to increase water resources before whittling them down to a shortlist of 100 judged against environmental and planning objectives. We measured our overall plan against seven criteria.

We have developed our plan looking at longer and shorter timescales for action. We have planned for how much we need to change our business operations to meet tighter environmental regulations by 2025. We have also allowed room to cope with potential changes to regulation, resilience, standards and levels of demand, which might mean we need to increase the water supply sooner than we thought.

We are mindful that our customers recognise our expertise and trust us to make complex investment decisions on their behalf. They have faith that we will work out the best way to supply their homes and businesses with water when they need it and keep their bills manageable. We were recently named number one water company for customer service 2017-2018 and we will continue to work closely with our customers.

We are proud of our Preferred Plan and believe that we have considered the issues from every angle. This revised plan aligns with our draft Business Plan for 2020-2025, which sets out the business case for investment in water resources management of some £850 million. Our overall Business Plan will add less than a 1% increase to customer bills but will mean they can look forward to the future with confidence.

'THIS IS NOT JUST CLIMATE CHANGE PLANNING. IT'S ACTUALLY JUST "PROPER PLANNING"!'
Anglian Water customer

Water companies face a time of great change and challenge but here at Anglian Water we see this as an opportunity to do things differently and really innovate to benefit our customers and the environment.

SCALE OF THE CHALLENGE

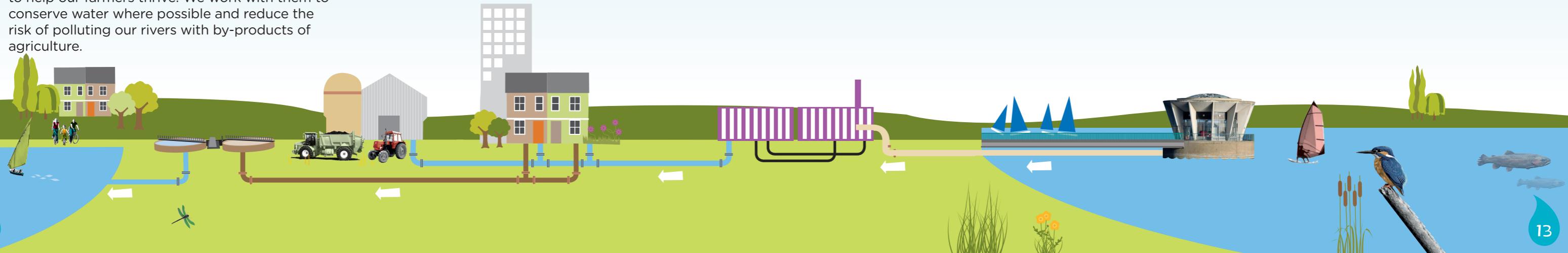
Our region faces four interlinked challenges that mean we need to act now so we can maintain the levels of service our customers expect. If we don't act we will move from having a current overall surplus of water of 144 million litres daily to being in deficit by 2045 to the tune of 146 million litres daily. Without any intervention by 2045 only five zones of the region will have a surplus of water, most notably in Lincolnshire.

CLIMATE CHANGE

The East of England is the driest in the UK. Our region has two thirds of the national average rainfall and there is high water loss through evaporation. Our region has been classified by the Environment Agency as under severe water stress. In parts of our region there is not enough water for the demands placed upon it. This means we have to transfer water from areas of surplus or areas where new resources can be created; opportunities for new water resources include storage of water in the winter, water reuse and desalination.

Climate change projections suggest that there will be lower summer rainfall and hotter temperatures meaning there will be greater loss through evaporation too. This means that the water below ground cannot be topped up so readily as it has been in the past. It is also likely that there will be more tropical style downpours. The rain will be more intense. Rather than refreshing the fields it could lead to fertilisers/nitrates and pesticides being washed into our region's rivers and impacting their water quality.

Known as the 'bread basket' of the UK our region produces half of the UK's sugar beet, a third of the nation's potatoes and a quarter of the wheat and barley as well as a wide variety of fruit and green crops such as peas, beans and spinach. Agriculture fuels our local economy and is essential for the nation's food security. So we must do all we can to help our farmers thrive. We work with them to conserve water where possible and reduce the risk of polluting our rivers with by-products of agriculture.



SUSTAINABILITY REDUCTIONS

Our region is home to some of the most important wetlands in the UK. We have some 100 areas that are internationally recognised and need protecting. We have unique habitats such as reed beds, mudflats and grazing marshes. So on any given day you can see a Sandpiper, a Wagtail or Great Crested Grebe. Thanks to pioneering work with our partners at Rutland Water our region is one of the few places you may catch a glimpse of a newly hatched Osprey chick. We are lucky to have some of the only breeding pairs in the country.

It is a privilege to manage water resources for an area famed for its natural beauty and range of animal and birdlife. Yet at the same time it places a special responsibility upon us all to do the right thing to cherish and protect this precious environment.

We have to make sure that taking water out of the rivers or from underground can be maintained and does not cause actual or potential environmental harm. These are known as sustainability reductions. Between 2020 and 2025, we will reduce our abstraction rights in sensitive areas by 84 million litres daily.

POPULATION GROWTH

At the same time as the climate is changing and the environmental rules are tightening, our region is one of the fastest growing in the UK, with one in five new homes built in our area. The number of households we supply has already increased by 20% since 1998.

The population is predicted to grow rapidly in the coming decades with regional expansion forecast to be another 20% in the next 25 years. Population growth 'hotspots', where population is projected to grow by more than 30%, have been identified in;

- Central Lincolnshire WRZ (Lincoln),
- Ruthamford North WRZ (Corby, Wellingborough, Daventry, Peterborough),
- Ruthamford Central WRZ (Newport Pagnell, Milton Keynes).

Taken across our 25-year planning period, regional expansion will create an increased demand of 109 million litres daily rising to 1,240 million litres daily by 2045.

DROUGHT

Our fourth major challenge is the risk of drought. Since the last drought of 2011-12 we have been concerned that parts of our water system are vulnerable. If there were to be a severe drought we would not be able to maintain normal service for customers and may have to impose rota cuts and use standpipes in the streets.

Our past experience of managing through a drought has helped us prepare this plan but we do not believe that any of our customers should experience these types of restrictions in a severe drought, and our customers agree.

Increasing the system's ability to cope with drought and avoid restrictions for our customers requires us to secure an extra additional 26 million litres per day.

ANGLIAN WATER'S WATER RESOURCES MANAGEMENT PLAN 2019

WATER RESOURCES IN THE EAST OF ENGLAND ARE UNDER INCREASING PRESSURE FROM A RAPIDLY GROWING POPULATION, CLIMATE CHANGE AND ENVIRONMENTAL NEEDS. THERE IS ALSO A SIGNIFICANT AND GROWING RISK OF SEVERE DROUGHT. OUR CUSTOMERS HAVE TOLD US TO ACT NOW TO ADDRESS THESE CHALLENGES.

POPULATION GROWTH

- We serve 20% more properties now than we did in 1998.
- Regional population is expected to increase by 20% over the next 25 years compared with population levels in 2011-12.
- Total impact is 109 MI/d by 2045.

CLIMATE CHANGE

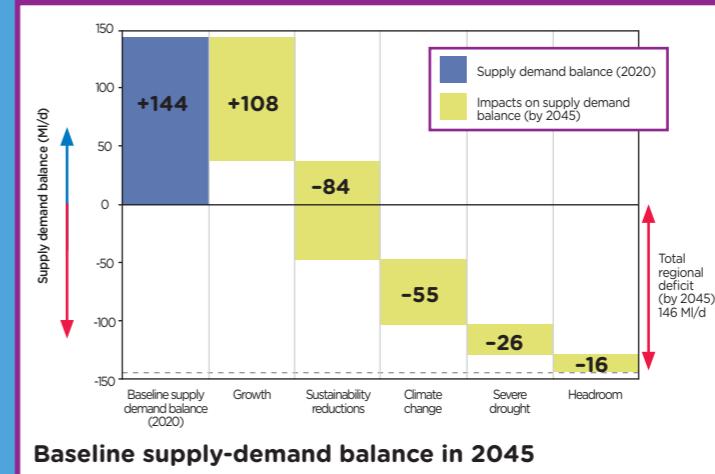
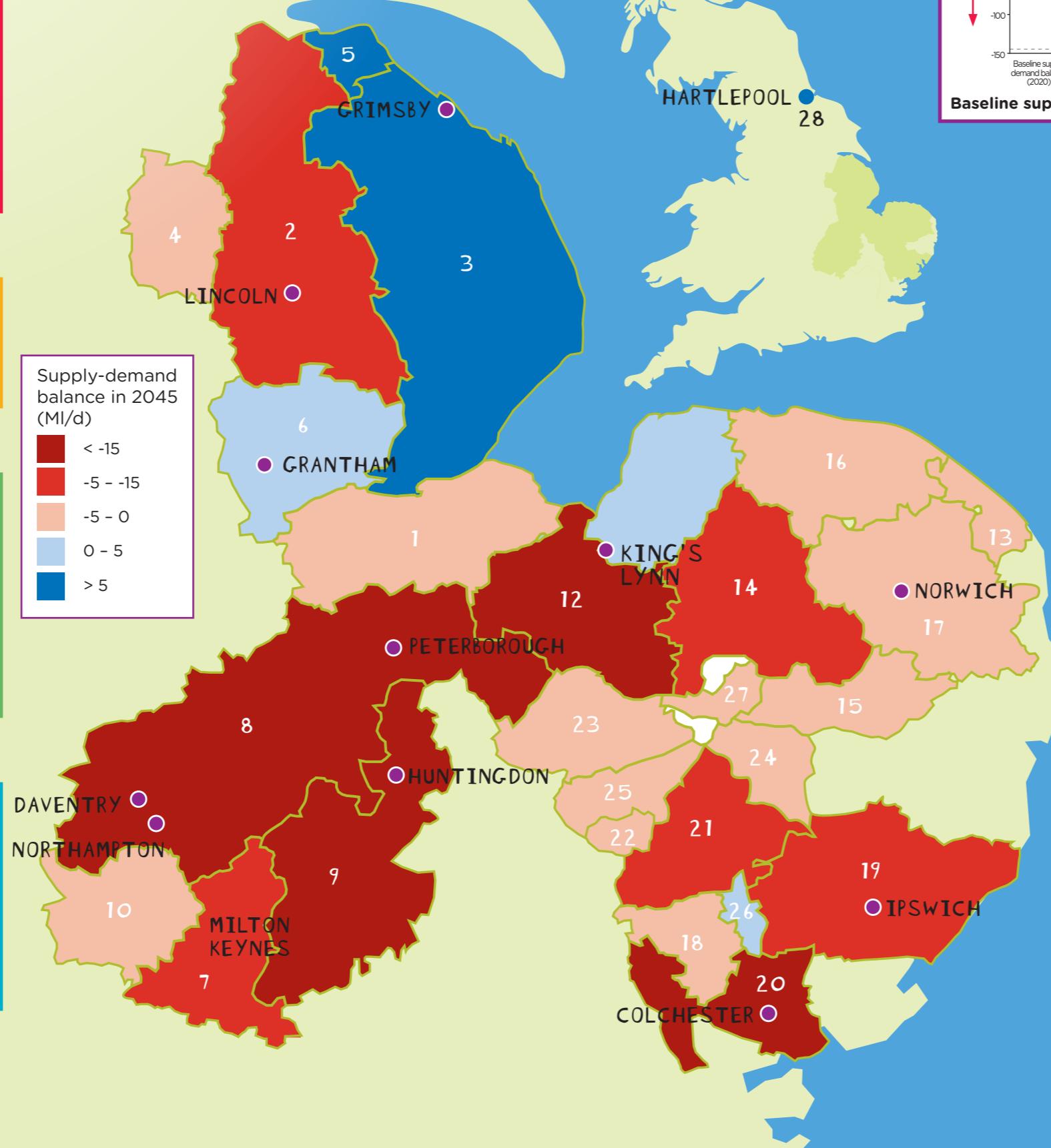
- Climate change is one of the most significant threats we face.
- Total impact is 55 MI/d by 2045.

ENVIRONMENTAL NEEDS

- Our region is environmentally sensitive and home to many internationally important wetland ecosystems that need protecting.
- We need to reduce our abstractions to prevent actual or potential environmental harm.
- Total impact is 84 MI/d by 2045.

DROUGHT RESILIENCE

- Our customers have told us that the use of severe restrictions is not appropriate or acceptable.
- But parts of our system are vulnerable to severe drought, so we need to act now to reduce this risk.
- Total impact is 26 MI/d by 2045.



THE SCALE OF THE CHALLENGE...

- The total impact on our supply-demand balance is 290 MI/d by 2045.
- There is a total regional deficit of 146 MI/d by 2045.

Impacts on our Water Resource Zones.

Key	Water Resource Zone	Population	Climate Change	Environmental	Drought
1	Bourne	✓		✓	
2	Central Lincolnshire	✓		✓	✓
3	East Lincolnshire			✓	
4	Nottinghamshire	✓		✓	
5	South Humber Bank				
6	South Lincolnshire	✓	✓	✓	
7	Ruthamford Central	✓			
8	Ruthamford North	✓	✓		
9	Ruthamford South	✓	✓	✓	
10	Ruthamford West	✓			
11	North Fenland	✓		✓	
12	South Fenland			✓	✓
13	Happisburgh	✓		✓	
14	Norfolk Rural North	✓		✓	
15	Norfolk Rural South	✓		✓	
16	North Norfolk Coast	✓		✓	
17	Norwich and the Broads	✓		✓	
18	Central Essex	✓			
19	East Suffolk	✓	✓	✓	
20	South Essex	✓	✓		
21	Bury Haverhill	✓		✓	✓
22	Cheveley			✓	✓
23	Ely	✓		✓	
24	Ixworth	✓		✓	
25	Newmarket	✓		✓	✓
26	Sudbury	✓		✓	
27	Thetford	✓		✓	
28	Hartlepool				

HOW WE MANAGE OUR WATER RESOURCES

Supply and Demand measures

As with any successful business we rely on being able to manage supply and demand for our services. Unlike a clothing business for example, a shortage of our product can have immediate and very serious consequences for our customers. Increasing water supplies takes considerable time and significant investment which is why we take a long term approach to managing water resources.

We aim to have sufficient water to meet all of our obligations and let our customers get on with their lives. To give a sense of scale, in our region we distribute more than one billion litres of water daily. We measure usage in million litres and it takes two and a half million litres to fill one Olympic swimming pool. It is a highly complex, specialist area of expertise to work out how much we have, how much we need and how much we can move around at what cost at any point in time.

Our first priority is always to look at the demand for water and see if there are ways we can reduce the amount of water used or lost through leaks. This focus on demand side measures is shared by our customers. Our effort to date through successful public awareness campaigns such as Love Every Drop has helped our customers and residents understand the true value of water.

Our revised dWRMP sets out a number of important demand side interventions. Population growth is the biggest demand pressure we face. In the coming decades we need to connect more households to our system.

The other three issues, climate change, sustainability reductions and withstanding drought, affect the supplies we have available. So these are called supply side pressures.



PREFERRED PLAN

Our plan is aimed at tackling head on the four challenges we face. It is a twin track approach – we will focus first on the demand side and reduce the amount of water used. But we will also invest in some supply side measures to increase the amount of water available.

Reliable

- Ensure our system is able to withstand severe drought (defined as a one in 200-year event) and climate change so that none of our household or non-household customers are exposed to an unacceptable risk of rota cuts and standpipes.

Sustainable

- Provide enough water to meet local authority housing growth targets
- Meet all of our legal environmental obligations. These include taking water out of rivers and reservoirs without risking actual or potential environmental harm
- Make best use of existing water resources before developing new ones. These include developing schemes to manage demand for water that are value for money and trading water with other water companies to share any available surplus

Demand Management

We believe managing demand for water is especially important for our region as the Environment Agency has classified it as under severe water stress; it is growing fast and it is environmentally sensitive. We currently put the same amount of water into our network even though we supply 20% more properties than we did in 1998. We have achieved these savings by increasing the number of customers who have a meter, reducing leaks and helping customers become more efficient with their water use. We are industry leaders in tackling leakage.



Our guiding principles remain constant: we aim to develop a system of water supply that is reliable, sustainable and affordable.

- Ensure that solutions to WRMP19 are flexible enough to cope with unknown future needs from 2025 onwards. These may include exporting water to Affinity Water (Central) and further reductions in the amount of water that can be taken out of rivers and reservoirs.

Affordable

- Ensure the economic evidence used to develop our investment strategy is solid and transparent
- Clearly set out the bill implications of our investment strategy and ensure they are understood and supported by customers
- Ensure our Preferred Plan represents 'best value' for customers over the long term
- Ensuring our assets such as our pumping stations and water recycling centres are operating at the capacity they were designed for.

We also have one of the highest levels of household meters for our industry. By 2019 we will have 93% of households metered and 86% of customers on measured charges.

But to meet our goals we have developed an ambitious 25-year demand management plan which is made up of three parts. These are smart metering combined with behavioural change, leakage reduction and additional water efficiency initiatives.

"JUST LIKE FOLKS NOW USING SMART METERS ARE LESS INCLINED TO LEAVE A MYRIAD OF APPLIANCES ON STANDBY, IT WILL, THROUGH EDUCATION AND INDIVIDUAL CUSTOMER COST SAVINGS, BECOME THE NORM TO USE WATER SPARINGLY"

Anglian Water customer

Smart Metering

We already know that smart meters can change behaviour as those customers with a smart meter tend to save water more than those with a standard meter. We plan to install smart meters based upon a remote sensing technology known as Advanced Meter Infrastructure (AMI). These are the next generation of meters allowing reading to be taken at hourly intervals, which are then remotely collected and shared with our customers.

This data is gold dust because we can analyse it and see a customer's consumption pattern. This helps us pinpoint whether there are leaks from pipes supplying water to the home or leaks within the property caused by faulty plumbing. We can contact the customer and tell them of the leak so they can fix it promptly and help them save water and money. Our smart metering trials have shown clear benefits in finding and reducing leaks particularly from leaking toilets. In a single day one faulty toilet can lose 500 litres of water!

By the end of 2025 (AMP7) we estimate that smart meters coupled with the changes in customer behaviour and the leakage reductions that result will lead to a demand saving of seven million litres daily and seven million litres daily from fixing leaks from supply pipes. By 2045 we estimate that the next generation of smart meter will yield demand savings of 22 million litres daily and a further 28 million litres daily from fixing supply pipe leaks.

Leakage

Leakage is one of the biggest challenges facing the water industry and an issue our customers are particularly keen for us to tackle. Before we can ask our customers to conserve water resources we must show we are taking the lead as a water company to reduce leakage further.

Since privatisation in 1989, we have reduced leakage by 30%. We aim to build on that success and reduce leakage from a three year average of 182 million litres daily during 2017-18 to 142 million litres daily by 2025, a reduction of 22%. By 2045, we plan to reduce our leakage to 106 million litres daily, a reduction of 42%. We will achieve these targets through a mixture of tried and tested techniques and new innovations in technology.

Water Efficiency

Our plan includes a range of ways to help our customers use water more efficiently at home and save water. We will extend the Bits and Bobs campaign where we retrofit water efficiency devices free of charge such as smart taps and the Potting Shed which aims to change how customers use water in the garden by sharing practical tips and advice.

We also promote activities such as a water savings reward scheme, incentives for customers to replace old toilets with more efficient models and installing water butts.

We will work with property developers to ensure that new housing is as water efficient as possible. This includes trialling the use of greywater and rainwater harvesting to produce a level of 80 litres daily per person of drinking water.

We predict that these efforts will save seven million litres daily by 2025 and 30 million litres daily by 2045. These figures translate into an individual consumption level of 120 litres daily per person by 2045. This will be one of the lowest levels of water use in England and Wales.

We considered three levels of demand management options and carefully evaluated each one. The selected package of demand side measures has the strongest economic case and strikes the right balance of ambition and achievability, affordability and takes account of environmental issues.

"THE APPROACH NEEDS TO BE BALANCED AND THE COSTS VERSUS BENEFITS OF EVERYTHING NEED TO BE CONSIDERED. LEAKS ARE IMPORTANT TO THE END USER AND ARE VISIBLE FOR THE DOMESTIC CONSUMERS – BUT IT'S NOT THE ONLY WAY WATER IS WASTED AND NOT THE ONLY THING THAT MONEY CAN BE SPENT ON."

Anglian Water customer



Supply side capacity

Given the unprecedented nature of the challenges we face we have to invest to increase the supply of water and cannot rely on demand side measures alone.

By 2025 only three zones East Lincolnshire, South Humber Bank and Hartlepool will have more than a small surplus of water compared to 14 of our zones at the beginning of 2019.

We have limited options for new surface and underground resources. 14 of the 22 zones that will go into deficit can only be supplied by a water transfer. Transferring surplus water is also generally the least cost option.

Our plan focuses on extending our existing network to connect our water supplies and move water more easily around the region. This makes the best use of existing resources, is most sustainable and suits our customers' preferences. See the map at the end of the document for how the extended network will work.

We are able to use the surplus water in Central and East Lincolnshire and North Fenland to supply the zones of Ruthamford, Bury Haverhill, East Suffolk and South Essex.

In addition, we will develop new resources at South Humber Bank to feed into the network. We currently plan to convert some of the non-drinking water at Elsham into drinking quality and develop a reuse scheme at Pyewipe to replace non-drinking quality water.

Developing this network so we can transfer water more easily gives us scope to consider what new resources we will need in the future. The only new resource scheme we need to develop in the short term is Pyewipe. But in the medium to long term we are likely to need more resources. This could include winter storage, recirculation of recycled water or desalination. So at this early stage we will not make a final decision on a desalination scheme at Felixstowe for example, but we will work with neighbouring water companies and others to identify the best options to take forward in our updated plan in 2024.

The extended network will provide additional resilience, helping our region withstand the effects of severe drought and other extreme weather events such as freeze-thaw which occurred during the Beast from the East.

Sustainability measures

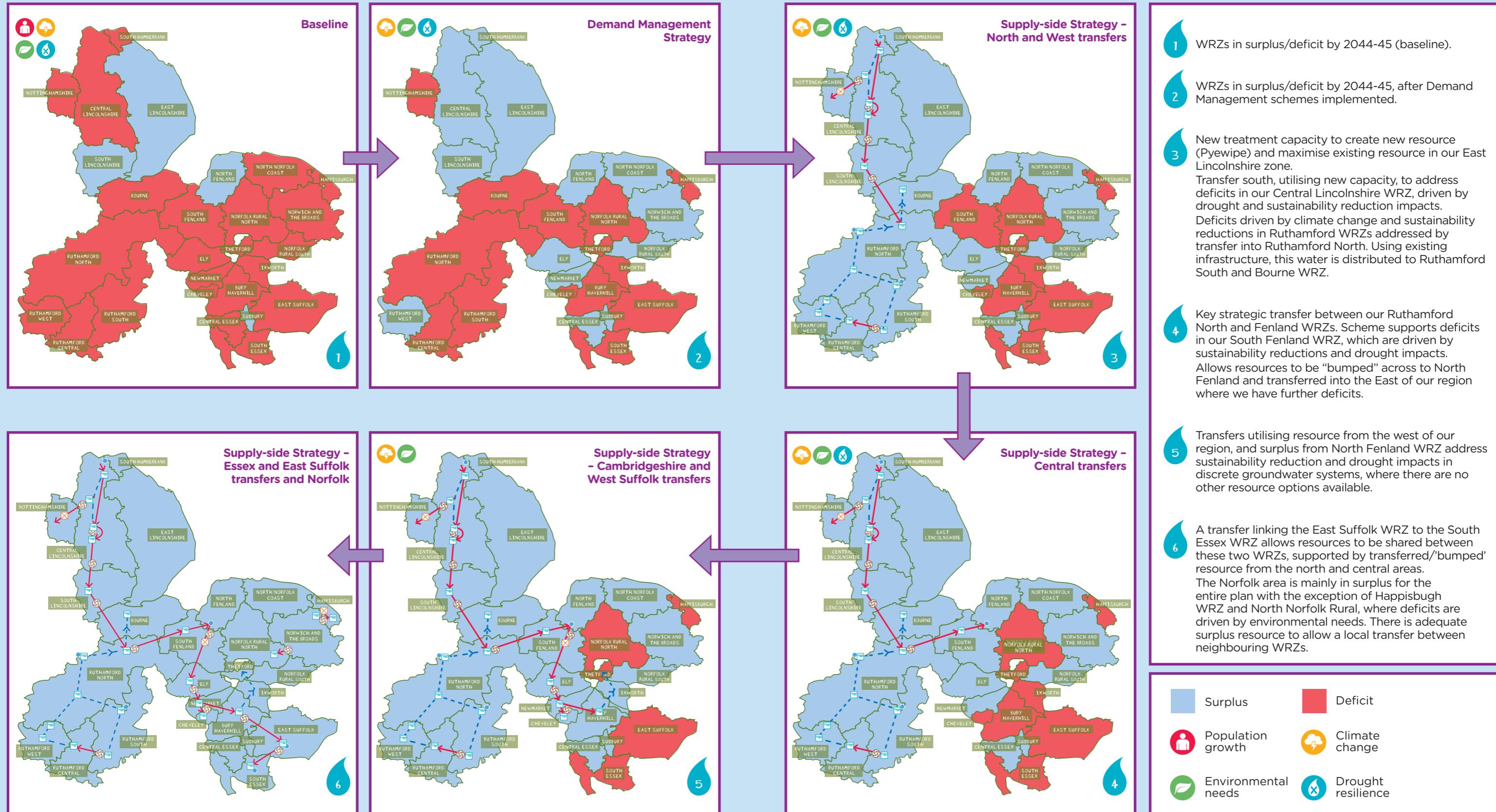
Under tighter environmental protection laws we have to reduce the amount of water we can take out of the rivers and reservoirs to feed our water network so that our actions don't have the potential to cause harm to the environment. We work closely with the Environment Agency and Natural England to develop approaches that keep the balance between meeting the environmental needs and maintaining the public water supply.

To meet our new obligations we have agreed a programme of schemes for some of the region's rivers where we will take out less water. These include, River Lark, Nar, Catfield, Poulter and Bumpstead Brook. But in some cases we have agreed that we will not reduce the amount of water we have to take out if we balance it with pumping water in to the river at times of low flow.

Broughton Brook in the Great Ouse catchment area is an example where the river flow is monitored daily and we can act quickly to pump in water to enhance flows and protect the precious wildlife the rivers are home to.



OUR WRMP STRATEGY



CONCLUSION

We believe our Preferred Plan provides the best value for our customers in the long term. The strategy:

- Prioritises demand management which aligns with customers' expectations.
- Offers great potential for smart metering to encourage customer engagement, making them part of the 'water saving' journey, and allowing us to produce an individually tailored customer service.
- Recognises the environmental benefits of demand management. By using less water we don't need to pump as much volume of water or treat as much raw water to make it safe to use and we also don't produce as much carbon through our activities.
- Challenges us and our customers to push the limits of what is achievable in terms of future water use.
- Makes the most of existing resources before developing new ones.
- Ensures customer bills are affordable with less than a 1% increase to the average bill during 2020-2025. Bills will go up in the early years before resuming their long term downward trajectory.

- Provides future flexibility over the location and type of new sources of water.
- Provides significant increased ability across our region to withstand drought and non-drought events e.g. freeze-thaw.
- Delivers environmental benefits by reducing the amount of water that will be taken from the rivers and reservoirs and ensuring there is no deterioration in the ecological status of our rivers and reservoirs which are the habitats for so many of our native and non-native birds and animals.

This plan future proofs the region against the extraordinary time of change and uncertainty ahead. By working closely with our customers our combined action will bring the water supply back into surplus. But we won't stop there. Our plan is a living document and will be the basis for the next phase of planning. In particular, we will be assessing the type of new resource schemes we may need in the future. We are confident that together we can meet the extraordinary times ahead.

GLOSSARY

Term	Definition
Abstraction	Withdrawal of water from rivers or groundwater
Assets	Infrastructure that a company owns and maintains such as pumping stations and water recycling centres that provide public water supply
Demand management	Ways to reduce the amount of water that is needed by customers and leaked from pipes
Greywater	Used water from showers and baths collected and recycled
Groundwater	Underground sources of water that have to be extracted from rocks and boreholes. Our region has over 200 such sources.
Mega litre (ML)	One million litres and the standard unit of measurement in water resources planning
Mitigate	Take specific action and thereby reduce the severity of the effects of an impact
Per capita consumption (pcc)	Consumption of resources measured by each individual
Potable	Drinking water
Regulators	Officially appointed bodies to oversee companies and make sure they comply with duties set by law e.g. Ofwat, Drinking Water Inspectorate, Environment Agency, Natural England
Resilience	Ability of the water system to withstand extreme events such as severe drought
Severe drought	Classed as a one in 200-year event or an event with a 0.5% annual average probability
Supply-side	Sources of water and the amount that is available across the system to use
Sustainability reductions	Complying with laws to take less water out of rivers, reservoirs and underground sources to avoid actual or potential harm to the natural environment

