

Thriving EAST



Working together for a **thriving** region

This Anglian Water report analyses socio-economic, climate and geographic factors across the country to identify how these forces combine to present unique challenges. Commissioned with Capital Economics, Thriving East uses independent data to examine the impacts on the region Anglian Water serves. It confirms the fundamental link between water, climate change, the unique geography of the region and economic growth.

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1 Introduction to Thriving East



Our purpose is to bring environmental and social prosperity to the region we serve through our commitment to Love Every Drop.

Delivering on our purpose is becoming increasingly challenging. We are managing water resources in a region that is water scarce, vulnerable to climate change, has many precious environmental sites to protect, a fast-growing population and a sizeable agricultural economy that relies on water to feed the nation.

However, this presents us with many opportunities to better support the communities and places that we serve, as water is increasingly crucial to their ability to thrive. Water underpins economies and businesses; it impacts the quality of green and blue spaces, and it is a key enabler for housing growth, particularly in our fast-growing region. This is why, when we started to build our business plan through to 2030, we wanted to gather as

much information as possible on the counties we operate in. We've engaged extensively with regional stakeholders to understand what is important to them. We have listened and understand the differing priorities and challenges across our region. This has enabled us to build a plan based on what our region needs and what we can deliver in response.

While we have always operated with a long-term vision to build resilience in our region, we commissioned the Thriving East research to give a new, richer understanding of how our region could develop. It shows the specific challenges faced by the diverse landscapes, businesses, and people, offering a comparison across other English regions – and highlights specific opportunities to address them.

Our business plan is one step in our journey to 2050, underpinned by our 25-year Strategic Direction Statement – first created in 2007, and still relevant today. Over the years we have invested in schemes to build resilience to flood and drought, enabled sustainable economic and housing growth, improved the ecological quality of catchments, and led the way in our industry towards becoming a carbon neutral business. Decades of investment has enabled us to withstand the impacts of climate change we are witnessing today. However, as these impacts intensify and our region continues to develop and grow, we know we will need to think and act differently if we are to continue to provide what our region needs.

We are an industry under scrutiny. We know that, collectively, we must go further and faster to meet the expectations our customers and stakeholders rightly have of us. We believe this research can help the region we serve to realise its true potential. We hope that it acts as a rallying cry to help bring together everyone who shares our ambition to deliver a prosperous, thriving future for the region.

Peter Simpson
Chief Executive, Anglian Water



In December 2022, the All Party Parliamentary Group (APPG) for the East of England launched its Levelling Up the East of England report. This was a partnership between the APPG and the East of England Local Government Association in conjunction with four universities, NHS partners and a range of private sector businesses, including Anglian Water.

This work assessed the progress in the region towards the Government's 12 Levelling Up missions and identified a need to work in partnership with local government, the wider public sector, private sector, academic bodies and innovators, to ensure those missions are delivered.

A chapter within the APPG report also focused on the important issues of sustainability, net zero and water security, which we deemed crucial to the success of this region – on the frontline of the impacts of climate change.

One year on, the APPG is delighted to be a part of Anglian Water's Thriving East report, which builds on the work in the Levelling Up report. The Thriving Index provides a further assessment and insightful analysis of the challenges facing the region, comparisons across other regions in England, and in particular the impact on water supplies.

The Thriving East report makes clear ours is a region where long-term economics, social trends, and geography, pose significant challenges, but which also offer major opportunities.



In a few short years, our region will look and feel very different. In this important report, Anglian Water highlights how it is adapting to these challenges, thinking differently, and planning for the future. The report also, rightly, highlights the importance of partnership working with our communities towards a shared vision for the future, something we wholeheartedly endorse.

All players in the region, including national and local government, the business community, public and third sector groups, have more to do to address the challenges we face. This includes: investing in the area's future population needs; developing innovative policy solutions where we don't have the answers; and maintaining an open and honest dialogue to drive sustainable solutions.

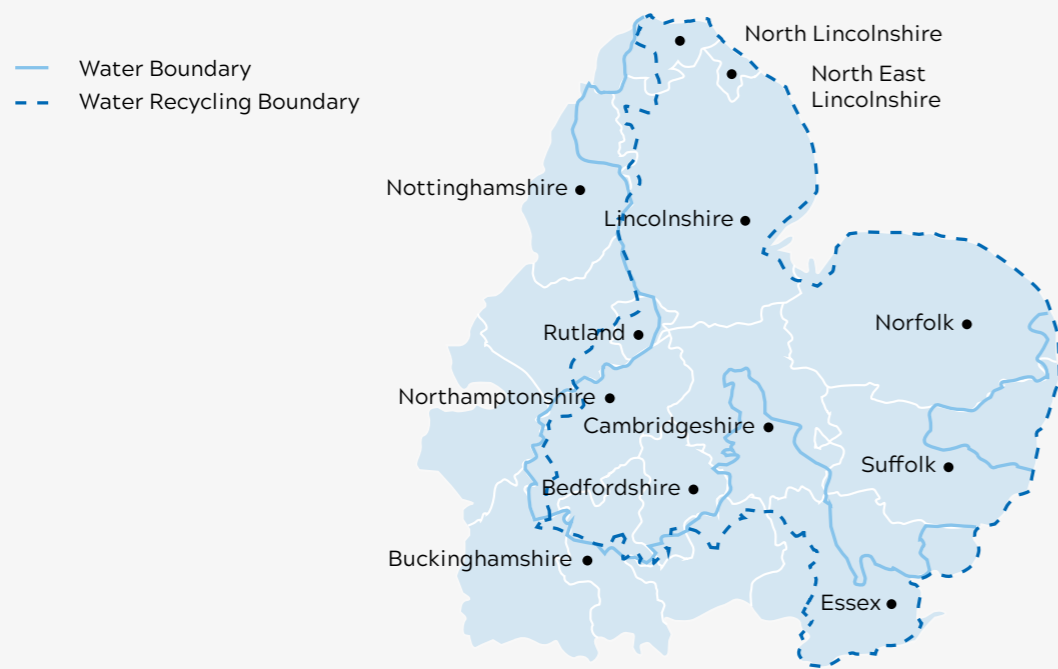
We thank Anglian Water for its leadership with Thriving East and we look forward to working together and continuing this conversation.

Daniel Zeichner MP and Peter Aldous MP
Co-Chairs of East of England
All Party Parliamentary Group

2 Overview of the Anglian Water region today

Thriving East aims to identify the unique factors that will shape the future of the region served by Anglian Water. At its heart is new research developed by Capital Economics, an independent consultancy specialising in economic analysis and insight. The research presents us with a resource to help identify the opportunities for a prosperous, thriving future. There is more on the methodology on page 9.

How we define the region Anglian Water serves in Thriving East



The region we serve is home to approximately nine million people. Essex is the most populous county, with almost 1.9 million people, 20% of the overall population. Rutland has a population of around 40,000, while North Lincolnshire and North East Lincolnshire have populations of roughly 170,000. Cambridge, Peterborough, Milton Keynes, and Northampton are four of the UK's fastest-growing cities over the last decade. The region's population is predicted to increase by more than 700,000 people over the next 20 years. This places extra pressure on water resources and the wider environment, with new housing developments and connection to water supplies crucial to enabling sustainable growth.

Long-run economic growth – meaning an increase in productive capacity – has been below

the national average. Between 2000 and 2019, regional Gross Domestic Product (GDP) grew at 1.8%, compared to 2.1% for England as a whole.

Agriculture's economic contribution is especially sizeable, at roughly twice the national average. The proportion of the local workforce working in agriculture is around 1.5 times the national average. Lincolnshire supports 75,000 food sector jobs, processing around 70% of the UK's fish and around 30% of England's vegetables. This demonstrates the extent to which economic activity in the region depends on water resources. Water Resources East has calculated that 10% of the East of England's water resources is used for farm irrigation – around four times as much as any other region in the UK – with another 5% being used for energy, industry and other purposes.

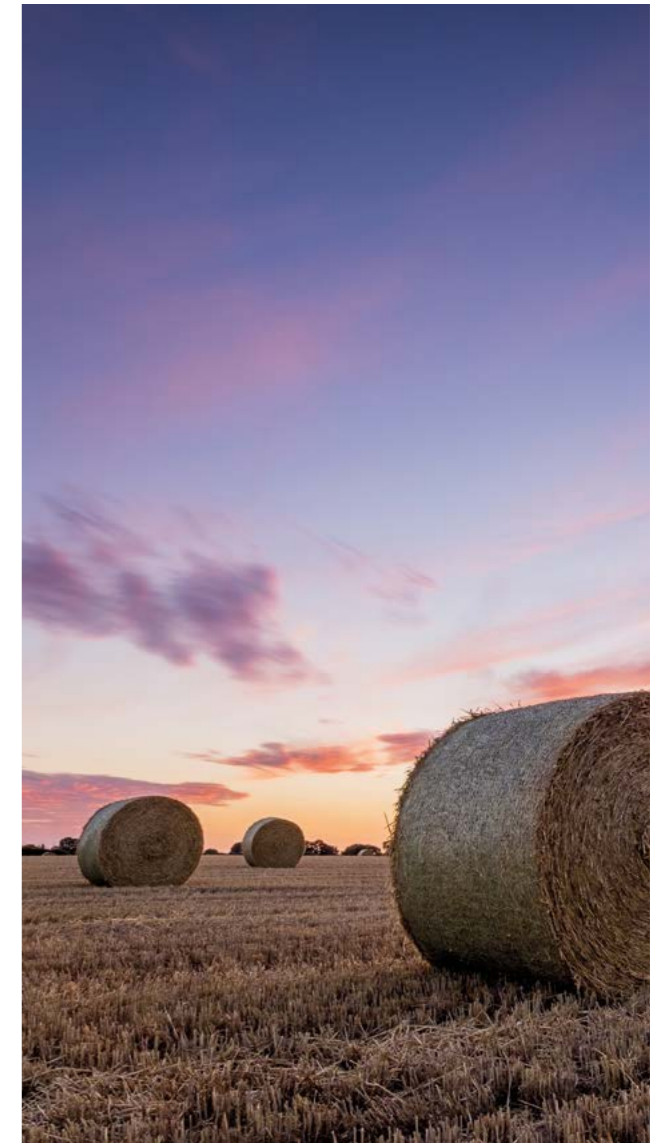
The region is home to Cambridge's Science Park, the largest commercial Research & Development (R&D) centre in Europe. In the East of England, R&D expenditure per head in 2019 was highest in the country, and at £1,106 was almost twice the UK average of £577.

Another opportunity for the region is in clean energy, which predominantly comes from biomass, nuclear, solar, and wind. Norfolk and Suffolk are emerging as key hydrogen power 'hubs' and the Humber region is home to the UK's largest opportunity for industrial decarbonisation.

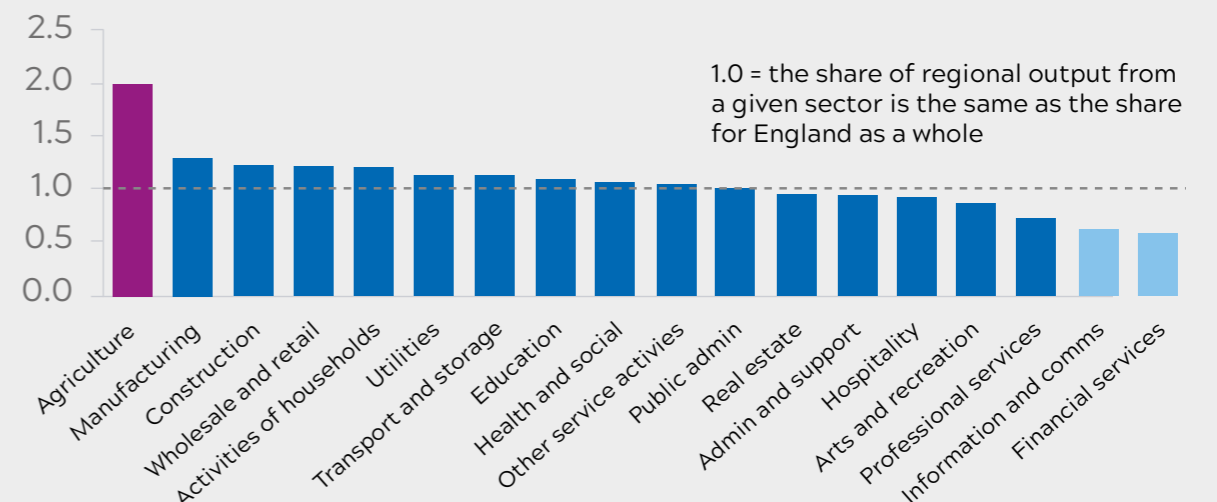
The East of England is the key transport and logistics hub for the country: facilitating links from key ports such as the Port of Felixstowe in Suffolk and the Port of Immingham in North East Lincolnshire, as well as two of England's five busiest airports, Stansted and Luton.

"The East punches above its weight and is a net contributor to the economy. We have all the hallmarks to deliver the most innovative jobs and career aspirations in the country. The fastest ability to decarbonise thanks to our leading green technologies throughout the area and cutting-edge science and medical facilities thanks to the expertise in our area."

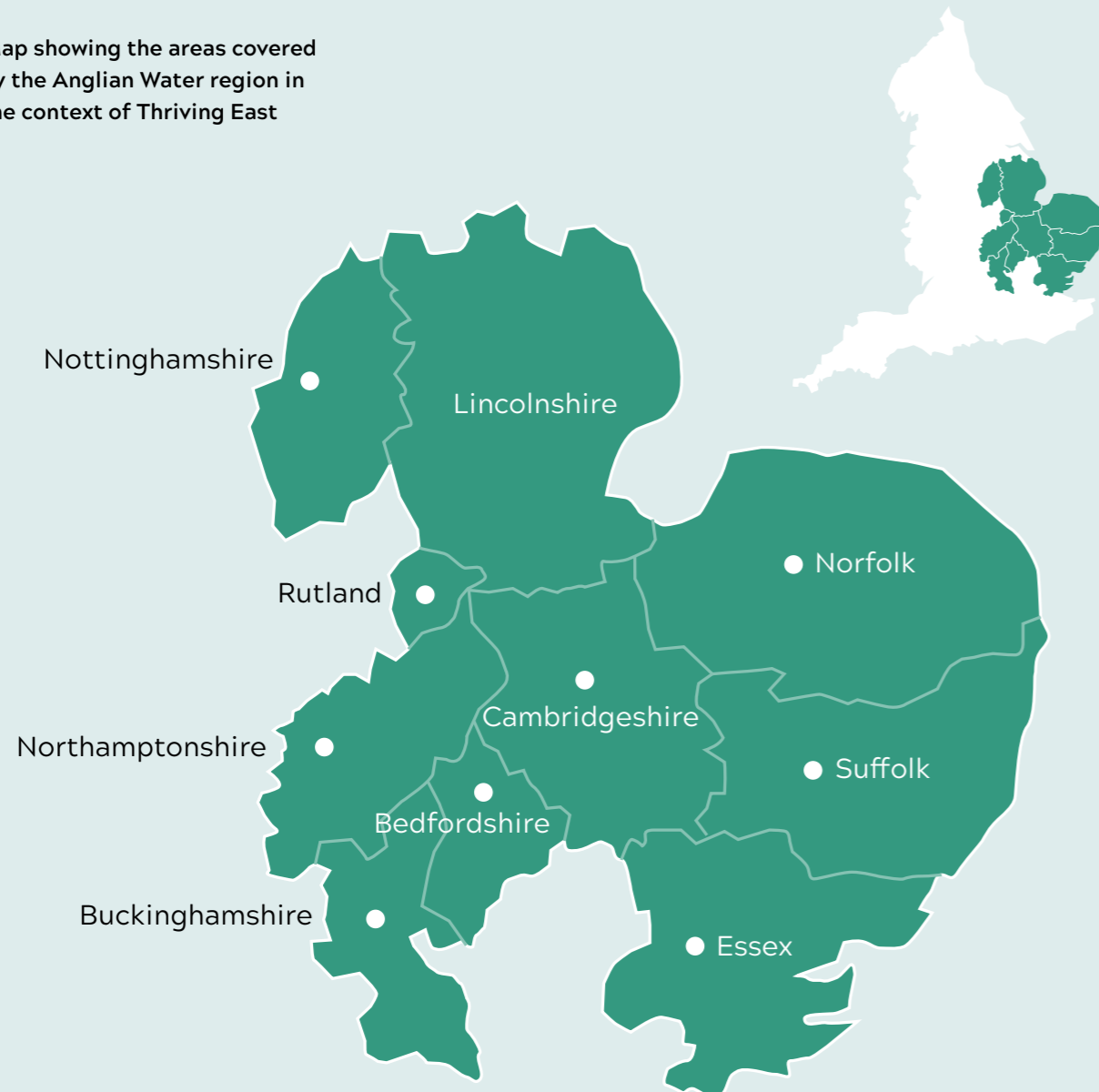
Duncan Baker MP North Norfolk



Anglian Water region's share of Gross Value Added by industry relative to England (2019, %)



Map showing the areas covered by the Anglian Water region in the context of Thriving East



10 million visits a year, with the tourism industry in the East of England valued at more than £10 billion a year and employing around 240,000 people

75% of land in the East of England is used for agriculture – the highest share being Lincolnshire (83%) and Cambridgeshire (79%) – more than any other region

Lowest average rainfall and highest average temperatures in England. In 2040, the Met Office predicts average rainfall of just 2.14mm per day (national average: 2.85mm) and average temperatures of 11.4C (national average: 11C)

28% of land is below sea level. 1.2% of properties are at high risk from flooding, well above the national average

£3.4 billion of crops and livestock produced across 1.4 million hectares of land (2019)

Per capita greenhouse gas emissions of 7.3 tonnes, well above the national average of 5.7 tonnes (2019)

7% woodland cover, well below national average of 10%

More on the methodology and sources can be found at: www.anglianwater.co.uk/about-us/our-strategies-and-plans/thriving-east/

3 The Thriving Index: the region's unique challenges

How to read the Thriving Index

The Thriving Index acts as a framework to measure the 20-year challenges facing the region across four pillars: Climate Change, Economy and Society, Sustainable Growth, and Nature and Environment. It allows for comparison of the scale and severity of those challenges across differing geographies.

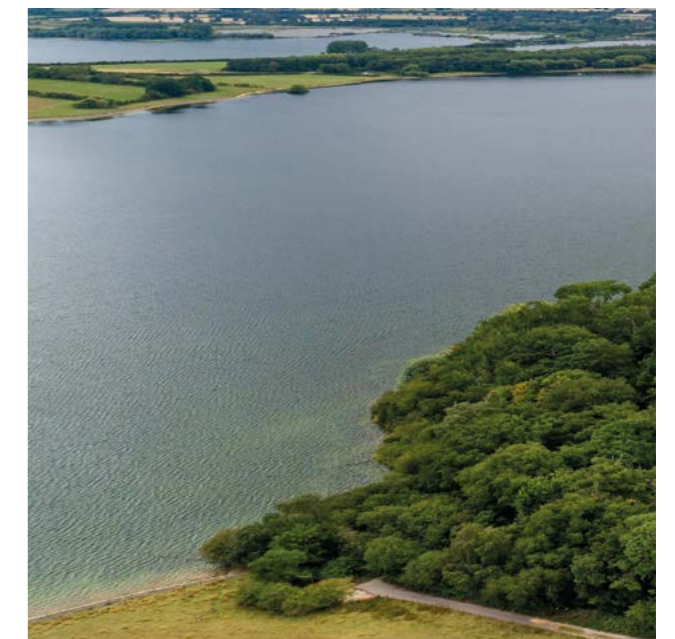
The Index consists of 28 indicators, using publicly available data, to create a unique measure of risk and opportunity. To ensure the Index is effective, the metrics are quantitative, consistently measured across the country and available at county level. The analysis is not designed to provide absolute quantification of the challenges, but to assess relative severity across geographies.

The metrics are assigned scores using an indexing methodology called 'distance to frontier score', which captures the gap between a geography's performance and the best performance in the sample. The scores are then ranked, with the lowest rank representing the area with the smallest challenge and the highest rank representing the area with the greatest challenge. The red, amber and green status in the tables below indicates the severity.

The Index has 22 different geographies: England overall as a national view, the nine official regions in England, and the 12 areas predominantly served by Anglian Water. Where county-level data was unavailable, metrics for the region covered by Anglian Water have been constructed based on more granular data at local authority, district or unitary authority levels. Similarly, where only regional data was available, each area has been assigned the same value as its region.

The Thriving Index ranks the region Anglian Water serves as England's second most challenged area, behind London. The research, coupled with our regional engagement programme, has highlighted many challenges and opportunities for this area, and confirms the fundamental link between water, climate change, the unique geography of the region and economic growth.

The scores in the Thriving Index relate to their impact on the region's ability to achieve environmental and social prosperity, reflecting Anglian Water's purpose. Recognising the strong link in this region between water resources and prosperity, and the existing high levels of water stress, economic activities which require high volumes of water are assessed as challenging. An example is agricultural Gross Value Added (GVA, a measure of economic output), where high GVA is assessed as a challenge. High temperatures, low levels of rainfall and high rates of population growth are other examples of challenges in this system, given the knock-on impacts for water.



The Thriving Index pillars

Climate Change

This assesses the different scale and severity of the challenge posed by a changing climate to water resources over the long term. It considers factors such as rainfall and precipitation rates, how much each region's water resources are replenished or diminished by the weather and changing seasons. It weighs how flooding affects people and property, emissions of carbon dioxide and other greenhouse gases, and each region's renewable energy capacity.

Economy and Society

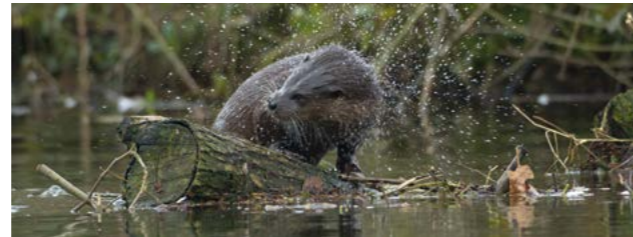
This area of research assesses the challenges related to the connections between social outcomes, economic development and each region's economic geography. It looks at workforce skills and social mobility, non-domestic water consumption and the role of agriculture in each regional economy.

Sustainable Growth

This assesses the severity of the challenge of sustainable growth to the region. It considers population growth, demographics, housing supply and demand projections in each region. It accounts for employment projections and economic forecasts.

Nature and Environment

Water underpins ecosystems, nourishes biodiversity, and continues to shape our natural environment. This pillar includes data on agricultural land use, Sites of Special Scientific Interest, air and river water quality.



Geography	Pillar Ranking				Overall
	Climate Change	Economy and Society	Sustainable Growth	Nature and Environment	
North East	2	11	1	1	1
South East	11	2	4	2	2
North West	1	9	3	3	3
South West	7	5	7	4	4
England	4	3	10	6	5
West Midlands	5	7	9	5	6
East Midlands	6	6	8	7	7
East of England	10	4	6	9	8
Yorkshire and The Humber	3	10	2	11	9
Anglian Water region	8	8	5	10	10
London	9	1	11	8	11

The below tables indicate the relative scale of the challenge for the Anglian Water region under each of the four pillars and their associated metrics.

Climate Change	Anglian Water Region's status	Economy and Society	Anglian Water Region's status
Rainfall projections	11	Agricultural gross value added	11
Precipitation rate index	10	Bathing water quality	8
Greenhouse gas emissions	10	Social mobility	8
Properties at high risk from flooding	8	Non-domestic water consumption	8
People at high risk from flooding	8	Workforce skills level	6
Temperature projections	7	Income deprivation	6
Renewable electricity installed capacity	1	Wellbeing estimates	5

Sustainable Growth	Anglian Water Region's status	Nature and Environment	Anglian Water Region's status
Population projections	8	Distance to public green space	11
Employment projections	8	Agricultural land use	11
Over-65 population projections	6	Tree cover	10
Housing stocks	6	River water quality	10
GDP projections	6	Air quality	7
Business stocks	5	Private outdoor space	3
Housing needs	2	Sites of Special Scientific Interest	3



The Thriving Index Pillars: **Nature and Environment**

The region we serve is the second most challenged in terms of nature and the environment. Low tree cover, high agricultural land use, and poor river quality all show as our biggest challenges.

The region we serve has just 7% of woodland cover, the second lowest figure of any region and well below the national average of over 10%. Low levels of tree cover contribute to a range of challenges – less shading and cooling, increased thermal heating, increased evapotranspiration from soils and plants, and less biodiversity. It also increases flood risk: woodland soil tends to be more permeable meaning that when it rains, more of the water will be absorbed by the ground instead of draining into water courses. We are planting trees where we can, lowering the risk of fluvial flooding as well as improving biodiversity. We've also been working in partnership with developers and local councils

to help deliver more than 100 Sustainable Urban Drainage Systems (SuDS) since 2012, combining drainage materials, plants and soil, to help retain water and allow it to soak away naturally.

More positively, the Index shows there are a larger share of Sites of Special Scientific Interest (SSSIs) in this region that are in favourable condition. Anglian Water is responsible for 49 SSSIs, with 99% of these in favourable condition.

River water quality is highlighted as a challenge in the Index. Improving the health of our region's rivers is critical to our long-term ambitions for a flourishing environment. Water companies, on average, are responsible for 27% of the Reasons for Not Achieving Good Ecological Status (RNAGs). In the Anglian Water region, it's slightly less: we are responsible for 17.9% of reasons – a number that's reducing even further as a result of our investments and improvements.

Our main RNAG impacts are phosphorous and river flow. Heightened phosphorous levels pose a risk to fish and river wildlife. Phosphorous is mainly caused by discharges from sewage treatment plants, but also agricultural practices and leaking septic systems. Our phosphorous removal programme has been in place since privatisation in 1989, and has reduced concentrations in rivers by 80%.

One of the best ways we can protect watercourses in our region is by reducing the amount of water we take from the environment. This is called abstraction. Between 2015-2020 we reduced abstraction by 80 million litres per day. By the end of 2025, we will have reduced abstraction by an additional 85 million litres per day, helping to leave more water in environmentally sensitive sites.

Another major area of focus is improving performance of our water recycling assets. Following a detailed review, we know the very narrow watercourses, which are a specific feature of our region, create an increased vulnerability to serious pollutions. Our Pollution Incident Reduction Plan, updated during 2023, outlines how we are addressing pollutions, with interventions such as predictive analytics, enhanced blockage detection, and partnership working with Environmental Compliance and Services (ECAS) to drive down avoidable blockages. As we embed these changes across the network, we are gaining greater insight than ever before.

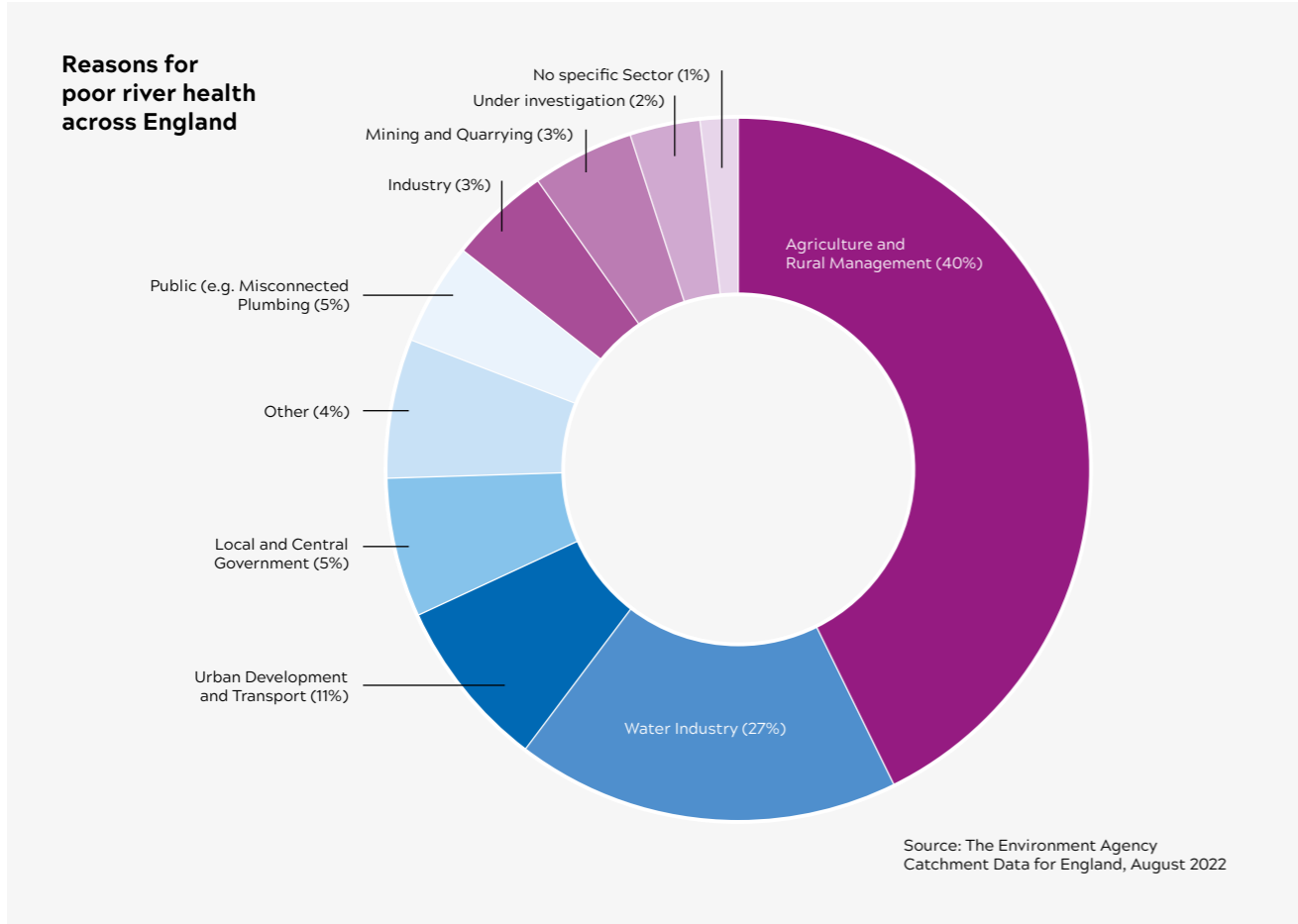
We are addressing these impacts through a number of programmes including Get River Positive (GRP), launched in 2022. We are also collaborating with others to help reduce their impact.

So far we have:

- Supported the Norfolk Rivers Trust's restoration project on the River Stiffkey, with a grant of £1 million to accelerate the Trust's plan to restore the river from source to sea. Matched by funding from elsewhere, our contribution is helping the Trust re-wiggle the river, reduce pollution from agriculture and install wildlife-rich, low-carbon treatment wetlands next to our water recycling centres in the catchment. These wetlands will further improve the quality of water we discharge before it is returned to the river.
- Supported the creation of the North Essex Farm Cluster: a community of farmers and landowners, working together to deliver greater benefits for soil, water, and wildlife. Taking in the River Pant and River Blackwater catchments, the Cluster provides access to expert advice, funding, project management and events for farmers.
- Improved 22.4km of river over the past year through phosphorous removal schemes.

Key opportunities:

We have one of the largest Water Industry National Environment Programmes (WINEP) in our industry, worth £811 million between 2020-2025, making us one of the biggest investors in the region's environment. Our 2025-2030 WINEP will be even bigger, and we will work closely with Natural England and local authority partners, to map our planned investments into Local Nature Recovery Strategies (LNRS). LNRS allow for targeted, co-ordinated and collaborative action to address the decline of nature and provide a framework to help realise the multiple benefits which can be achieved through nature-based solutions. These solutions are increasingly being utilised to provide a greater range of more sustainable benefits to many of the challenges we face.

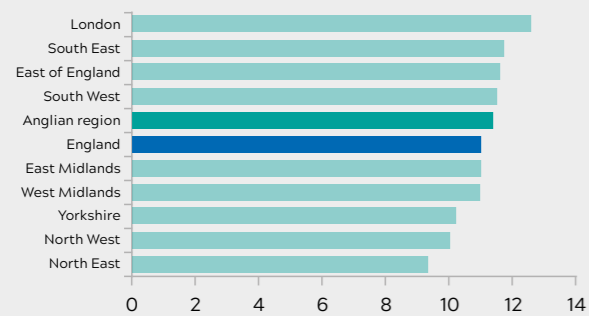


The Thriving Index Pillars: **Climate Change**

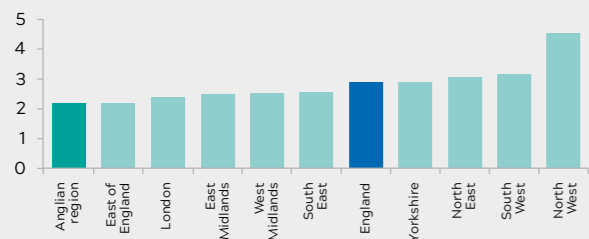
The region is one of the driest and hottest parts of the country, making it second most challenged nationally in terms of climate change within the Thriving Index. The Met Office predicts that by 2040, rainfall in the region will average 2.14mm per day, significantly below the national average of 2.85mm. In Cambridgeshire, the challenge is even more acute, with projected rainfall of just 1.9mm in 2040.

Temperature projections to 2040 indicate that the region we operate in will be hotter than the national average: 11.4 degrees compared to 11 degrees. We are already feeling the impact. In 2022, the Met Office recorded the hottest day on record (40.3 degrees) in Coningsby, Lincolnshire.

Temperature projections (degrees Celsius at 1.5 metres, 2023-2040 average)



Rainfall precipitation projections (mm per day, 2023-2040 average)



We must address the carbon challenge too. The Index demonstrates that in 2019, per capita greenhouse gas (GHG) emissions in the region totalled 7.3 tonnes, well above the national average of 5.7 tonnes. The biggest emitters were transport (30%) and industry (20%). As one of the biggest energy users in our region, we are committed to reducing our GHG emissions and reaching net zero carbon by 2030. Our Net Zero Strategy is built around seven pillars including maximising energy efficiency, decarbonising our vehicle fleet, purchasing renewable energy and minimising our process emissions. We have reduced our capital carbon (the carbon in our assets and what we build) by 63% since 2010.

Climate change is impacting rainfall patterns, which has a consequence on the availability and quality of water resources. By 2050, more severe droughts, combined with the need for better resilience, will create a deficit of 80 million litres per day in our surface water sources. Groundwater sources will also be affected, but changes to abstraction licences will restrict access to water, which benefits the environment. If we do not invest now in new sources of water, households and businesses will face shortages in future droughts.

We have long known about these threats. In 2017, we chaired the national Water Resources Long-Term Planning Framework. The report produced a number of water resilience measures which are still being used today, and played a major role in shaping national debates including the National Infrastructure Commission’s ‘Preparing for a drier future’ report. Furthermore, our long-term partnership with Water Resources East continues to support our understanding of the future water needs for other sectors, in particular agri-food and energy, enabling us to plan ahead for the coming decades. All of this work informs our Water Resources Management Plan (WRMP), which sets out how we will manage water supply and demand in our region, looking ahead 25 years.

Our twin-track approach to managing supply and demand will see us, alongside our Strategic Pipeline Alliance (SPA) partners, create a network of hundreds of kilometres of pipelines,

interconnecting to help move water more freely around the region. This means we can move water from areas with a natural surplus, to drier, more environmentally sensitive areas. This is Anglian Water’s largest ever infrastructure programme. In addition to new infrastructure, such as our pipeline and plans to build two new reservoirs, decades of investment has helped us achieve our long-standing track record on leakage from our own pipework. And, through our roll-out of smart meters, we are supporting our customers to better understand and reduce their usage.

We must also prepare for flooding impacts. Almost 30% of the region is low-lying, particularly near the coast. Inland, drought-parched land is vulnerable to flooding from intense rainfall events. About 1.2% of properties in the East are at high risk from flooding, above the national average of 0.9%.

We are taking landscape-scale approaches to improve resilience in areas at risk of both drought and flooding. Our Future Fens: Integrated Adaptation (FF:IA) programme is a key example of landscape-scale integrated water management and resilience planning. The Fens were drained centuries ago, resulting in a flat, dry, low-lying area. Half of the UK’s most fertile agricultural land is in the Fens, providing a fifth of the nation’s crops and a third of its vegetables. It is on the frontline of extreme weather patterns and lies within a few metres of sea level. Working with partners including the Environment Agency, WRE and local authorities, we are taking our multi-sector approach to water supply and flood management.

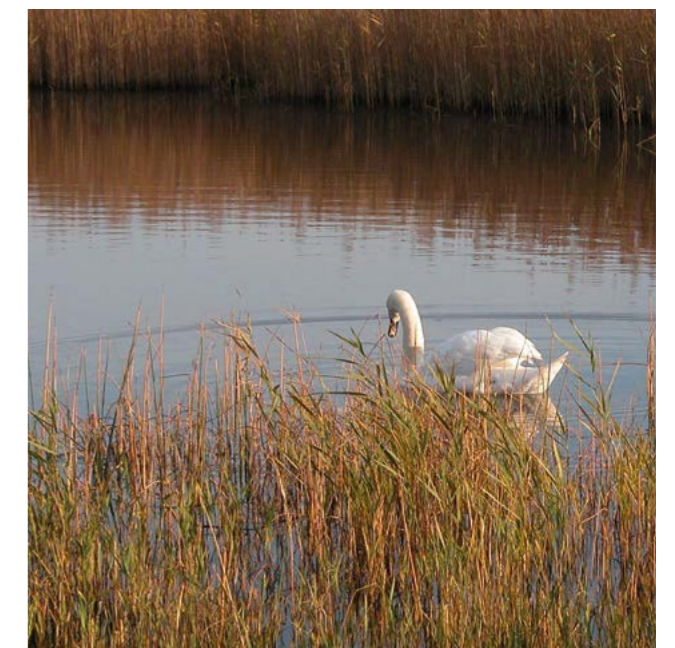
Another example is the Norfolk Strategic Flood Alliance, brought together in 2021 to support a catchment-based approach to protect Norfolk communities and infrastructure against the risks of inland and coastal flooding, as well as drought. Our work is one part of the puzzle to deliver an ambitious multi-agency approach that reduces risk, rather than focusing on reactive response.

Climate resilient infrastructure is another key focus area. We are proposing to renew long stretches of climate vulnerable mains to improve resilience against extreme heat and rainfall. Much of the land in the region

is drained and rich in soils which are highly shrinkable, often chemically aggressive and structurally unstable. Extreme temperatures lead to shrinking and expanding soils of this kind, exacerbating ground movements that can increase failures of ageing water distribution mains.

Key opportunities:

The region has the potential to be the driving force behind the UK’s green energy future. Norfolk and Suffolk alone have the potential to supply half of the country’s 40GW power target from offshore wind by 2040. According to the New Anglia Local Economic Partnership’s latest economic strategy report, clean energy will support 27,000 new job opportunities between 2019 and 2030 in the region. The Humber region is home to the UK’s largest opportunity for industrial decarbonisation, supported by infrastructure including carbon sequestration capacity, hydrogen storage and production. The World Economic Forum has hailed the Humber as a crucial player in laying out the global path to Net Zero.



The Thriving Index Pillars: **Economy and Society**

The region we serve is the fourth most challenged region on the economy and society pillar. In terms of social indicators, we rank around the middle on metrics such as workforce skills level, wellbeing estimates, and income deprivation.

We have the highest level of water consumption from business and industry in the country. 15% of all water taken from the environment is used for non-household supply. Business and industry in this region are higher-than-average water users, consuming on average around 0.6 litres of water per day relative to economic output, compared to 0.5 litres for England as a whole.

Development of green industries and wider economic growth will require a significant increase in water availability to meet rising demand. We are seeing a large increase in requests for water for business and commercial use – over 30 megalitres per day during 2023 – which we are having to reject as currently we do not have the resources. Water availability should never hinder economic growth or energy security. However, this trend will only continue without significant investment in water infrastructure.

The East of England is commonly referred to as ‘Britain’s breadbasket’ because of its contribution to food production. In 2019, the region’s farmers produced crops and livestock worth £3.4 billion across 1.4 million hectares of land. The Index shows that agriculture’s economic contribution in this region is roughly twice the national average. Lincolnshire alone processes around 70% of the UK’s fish and around 30% of England’s vegetables. The proportion of the local workforce working in agriculture is around 1.5 times the national average. Resilient water supplies will be critical to sustain the success of the region’s farmers and UK food supply.

Two thirds of non-household water consumption in the region – 10% of all water – is used by agriculture. In contrast the West Country, the next highest region, sends 2.7% of water supplies to agriculture.

28% of workers in the region have the highest skills level (professional occupations and high-level managerial positions) which is below the national average, according to data from the Office for National Statistics (ONS). The ONS’s Social Mobility Index also reveals lower-than-average social mobility in the region we serve. There is a clear challenge to address. The sheer scale of our investment programme to 2030 will have a positive impact, creating 7,000 jobs and supporting over 800 apprentices, many of them into green jobs – jobs which contribute to the UK’s net zero emissions target and other environmental goals.

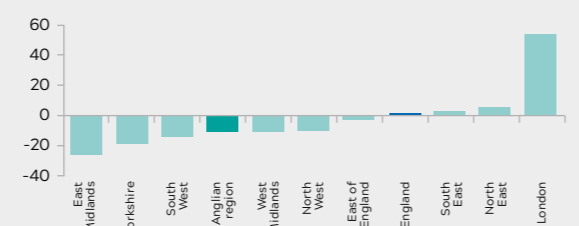
Non-domestic water consumption per unit of output (average litres used per day relative to GDP), 18-month average as of April 2023



Furthermore, plans are also going ahead for a £4 million ‘Net Zero Training Centre’ at the College of West Anglia in Wisbech, where we are contributing £2 million with our alliance partners.

Attractive beaches and clean bathing waters are an important driver of tourism, particularly on the coast. With around 10 million visits a year, the tourism industry in the East of England is valued at more than £10 billion a year and employs around 240,000 people. Around 67% of coastal bathing waters in the

Social mobility index, 2018



Anglian Water region have been classified as “excellent”, just below the 72% for England as a whole. Maintaining and improving the quality of bathing waters remains a priority.

Our ambition is for the majority of our customers to live within one hour of a designated bathing water site. We are safeguarding the quality of our region’s bathing waters with stakeholder engagement, targeted investigations and investment. This year, 94% of our coastal bathing waters were deemed ‘good’ or ‘excellent’. 17 sites have Blue Flags and a further 20 have Seaside Awards, supporting the tourism economies of coastal towns.

Key opportunities:

In 2014, we founded Water Resources East (WRE), a pioneering, multi-sector water resource planning strategy for the East of England. At that time, it was clear that future success relied on providing enough water for people and businesses while protecting the environment. The WRE approach is committed to finding the best management frameworks, governance models, financial direction, and infrastructure to build resilience. Through WRE, we are contributing to and creating a more integrated approach to long-term water resource management and planning.



“The East of England is commonly referred to as ‘Britain’s breadbasket’ because of its contribution to food production.”

The Thriving Index Pillars: **Sustainable Growth**

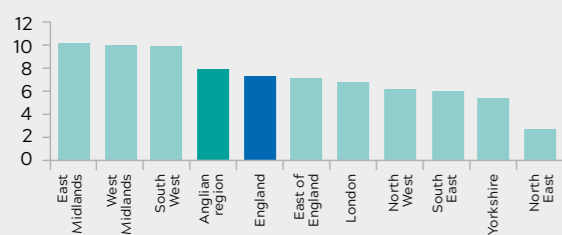
Positive economic, demographic, and housing indicators all point towards future growth. A key enabler to unlocking growth in the region is ensuring we have enough water to meet growing demand.

Projected population growth presents a particularly significant challenge for water supply in the region we serve. The total population in England is projected to rise by 8% over the next twenty years. At over 720,000, no region is projected to welcome more people. The long-term challenge is sustaining the pace of housing development against the fast-growing population and ensuring infrastructure is in place to facilitate demand.

The region's economic and demographic growth are inextricably linked to the climate change challenge. Every new home and business needs clean water at the turn of a tap and effective wastewater disposal. We must put in place the necessary infrastructure to protect the environment from further abstraction while still facilitating growth. More widely, the region will need other facilities too, such as new transport links, clean energy generation, and healthcare.

The Index projects that GDP in the region will grow 33% between 2023 and 2043, slightly below the 35% for England as a whole.

Population projections (cumulative growth between 2023-2043, %)



The overall picture in terms of housing stock is positive. While there are acute housing challenges in certain parts of the region, such as Cambridge, we rank in the middle of the Index in terms of housing stocks. It is the second least challenged in terms of the number of households on social housing waiting lists.



Key opportunities:

The Government has set out a clear ambition for housing growth in the region through its Cambridge 2040 proposals, which could see thousands of extra homes built to support growth in Cambridge. There are plans for a major new quarter for the city, more affordable homes and properties for key workers and young academics, improved sustainable transport, cycling and walking routes, fewer constraints on laboratory infrastructure and more green spaces. Anglian Water is working closely with Cambridge Water, Homes England, and the Cambridge Delivery Group to support this ambition. However, there is also an opportunity to look at the region more widely and target housing growth to areas where it can help to distribute the benefits of growth around our towns and cities.



“ Economic, demographic and housing metrics all indicate future growth in the region, however, these are all underpinned by water resources. ”

The Index also highlighted more specific, county-level challenges within the region we serve:

Bedfordshire

Greatest challenge

Climate Change

Key characteristics

Lowest greenhouse gas emissions in the region and lowest business stocks

Future outlook

High climate change impact – second lowest rainfall projections (2mm/day) and third highest average temperatures (11.8 degrees) in the region (2023-40)

Buckinghamshire

Greatest challenge

Climate Change

Key characteristics

Least challenged county in the region

Future outlook

Relatively resilient – lowest levels of agriculture and non-household water consumption in the region, highest woodland cover (11.6%)

Cambridgeshire

Greatest challenge

Climate Change | Nature and Environment

Key characteristics

79% agricultural land, lowest woodland cover (3.5%) in the region

Future outlook

Very high climate change impact – lowest rainfall projections (1.9mm/day) and highest average temperatures (12 degrees) in the region (2023-40)

Essex

Greatest challenge

Nature and Environment

Key characteristics

Poor river water quality, unfavourable state of most SSSIs, very little private outdoor space

Future outlook

High climate change impact – second lowest rainfall projections (2mm/day), highest average temperatures (12 degrees) in the region (2023-40), above-average population increase (10% 2023-2043)

Lincolnshire

Greatest challenge

Climate Change | Sustainable Growth
Nature and Environment

Key characteristics

Highest flood risk in the region (1.9% of people / 3.2% of properties at very high risk), substantial agricultural economy (5.4% of GVA / 83% of land use), very high water use by industry

Future outlook

Lowest projected GDP growth in region – significant resilience challenges given scale of agriculture plus flood risk

North Lincolnshire

Greatest challenge

Climate Change

Key characteristics

Most challenged part of the region – very high flood risk (1.5% of people / 2.9% of properties at very high risk), highest water use by industry and highest greenhouse gas emissions in the region

Future outlook

Water-intense economy plus high flood risk create significant resilience challenges

North East Lincolnshire

Greatest challenge

Economy and Society

Key characteristics

Highest installed renewable energy capacity in the region, very low proportion of skilled workers, very high income deprivation, bathing water quality challenges, very high industrial water use

Future outlook

Resilience challenges for water-intense industries

Norfolk

Greatest challenge

Climate Change | Economy and Society

Key characteristics

Very strong agricultural economy (2.4% of county GVA, compared to 0.4% national average), low proportion of skilled workers, bathing water quality challenges

Future outlook

High climate change impact – rainfall projected to change from the driest county in the region (2013-23) to the wettest (2023-40); significant projected population increase (up 9% 2023-43)

Suffolk

Greatest challenge

Climate Change | Nature and Environment

Key characteristics

Significant flood risk (0.6% of people / 1.2% of properties at very high risk), third lowest levels of rainfall in the region, high levels of agriculture (1.8% of GVA / 74% of land use)

Future outlook

Water-intense economy plus heightened flood risk create resilience challenges

Northamptonshire

Greatest challenge

Sustainable Growth

Key characteristics

Most challenged part of region for sustainable growth, with high pressure on housing and a growing ageing population

Future outlook

Strong upward demand for water, driven by second highest projected population increase in the region (11% 2023-43) and growth in employment

Nottinghamshire

Greatest challenge

Economy and Society

Key characteristics

Most challenged part of the region in terms of economy and society, with high levels of income deprivation, poor levels of reported wellbeing, low social mobility

Future outlook

Lowest projected average temperatures in region, second highest levels of rainfall in the region (though still below national average), second highest projected employment growth in region

Rutland

Greatest challenge

Sustainable Growth | Nature and Environment

Key characteristics

Second most challenged part of region, with highest share of agriculture in the economy (6.4% of GVA), high pressure on housing, river water quality challenges, poor access to public green space, second highest greenhouse gas emissions

Future outlook

Resilience challenges created by highest projected population increase in the region (12.1% 2023-43)

4 Anglian Water’s long-term vision for a thriving region

We have long known about the pressures facing the region we serve, guided by our purpose to bring environmental and social prosperity to the region we serve through our commitment to Love Every Drop. Our Strategic Direction Statement and its four strategic ambitions remain as relevant as they did in 2007.

Our purpose and 2050 Strategic Direction Statement will continue to guide how we address these challenges and plan ahead for future generations.

Our work and investments over previous regulatory cycles make us well-placed to deliver now and into the future. However, the Thriving analysis makes the localised challenges even clearer, and highlights the sheer scale of what we need for a thriving region over the next few decades.

Maintaining current levels of service will only become more difficult as the climate changes. We will need to invest significantly more into our operations just to stand still.

Successive price reviews have prioritised affordability and average water bills have remained broadly flat in real terms since 2010. However, based on the severity of the challenges our region faces, investment will need to significantly increase. Our enhancement expenditure for 2025-2030 will be twice what we planned for 2020-2025. It will need to increase by a further 50% between 2030-2035, and remain around these levels up to 2050 and beyond. To put this in context, the National Infrastructure Commission (NIC) calculates £12 billion of investment will be needed in water every year between 2025-2030, and then be maintained at around £8 billion per year from 2030-2055.

Our Long Term Delivery Strategy (LTDS) sets out how we will achieve our future vision, with our core pathway outlining the investments we expect to make to 2050.

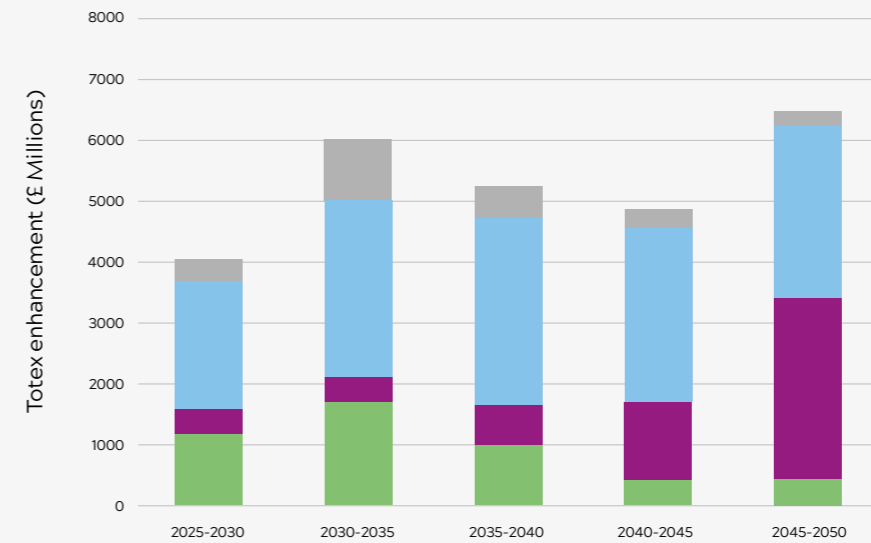
Customers quite rightly want us to ensure a sensible balance between ambition, affordability and intergenerational fairness. Whilst necessary increases to investment will raise bills in the long-term, we have tested our proposals with customers and stakeholders to make sure they reflect the things that matter most to them, and represent the best value for our region.

We want to achieve our long-term vision as quickly as possible. But, like all businesses, we must strike a balance between deliverability, affordability and financeability. To ensure our long-term plan is financially viable, we must think beyond 2030: we cannot be constrained by the methods and tools that we know and have in today’s context. Our LTDS considers a range of plausible future opportunities.

We have used Ofwat’s common reference scenarios: technology, demand, climate change, and abstraction reduction, to test our future plans. And, we have looked to the future through a variety of lenses including digital, innovation, partnership-working, and place-based approaches, to ensure we have considered every possible solution. This enables us to create a core pathway and a set of alternative routes should circumstances change.

Unprecedented transformation of our company and our sector, with core digital technologies such as the Internet of Things, digital twins, artificial intelligence and advanced sensing will be fundamental to delivery. We will also need a step change in our approach to unlock further funding opportunities, such as more cross-sector collaboration, and systems-focused, outcomes-based approaches to create the right solutions to these shared issues, whilst keeping costs low for customers.

Core pathway



The graph shows our ‘Totex’ spend (total expenditure), which includes our anticipated capital expenditure and operational expenditure to 2050.

Anglian Water’s vision for 2050



Resilient to the risk of drought and flood

- All of our customers will have at least two sources of water supply
- Our customers will never experience internal or external sewer flooding
- Surface water is prevented from entering our waste water network
- Integrated, multi-sector water management systems, embedded within smart cities and communities are the norm
- Two new strategic reservoirs will supply 625,000 properties across our region



A carbon neutral business

- We focus on eliminating waste and the root causes, leading to a reduced chemical energy use in our management of the water cycle
- Our treatment processes do not emit greenhouse gases such as methane and nitrous oxide
- Move beyond net zero and become a carbon positive business, reducing rather than contributing to the UK’s emissions



Work with others to achieve significant improvements in ecological quality of catchments

- Pollutions are consigned to history
- River health will be continuously monitored
- Our region will be regarded as an international exemplar for the use of nature-based solutions
- We will be ‘nature positive’
- Environmentally damaging substances such as PFAS (forever chemicals) and microplastics will be eliminated at source



Enabling sustainable economic and housing growth

- We will have capacity to support all customers at risk of water poverty
- The region will have the capacity to support the water demands for new businesses
- Planning requirements will mean all new housing and commercial developments are built to deliver international best practice on water efficiency
- Coastal and inland bathing water locations thrive due to their excellent water quality

5 Putting our region on the best path to thrive: the next five years

The Thriving insight demonstrates the need for ambitious investments to deliver for the region we serve – economically, socially and environmentally.

Our investment plan covering 2025-2030 is an ambitious step forward in our journey in our journey to fulfil our long-term vision. We now have an opportunity to tackle these challenges head on, recognising that without profound change, we will let down generations to come.

Worth £9 billion, our investments are designed to meet the unique challenges facing our fast-growing and climate-stressed region. We are also prioritising what our stakeholders and customers tell us matters most: safe, clean drinking water, protecting the environment and supporting those who are vulnerable.

Our enhancement expenditure is double that of 2020-2025. However, we are mindful of affordability for our customers. Our plans have been robustly assured to ensure we are delivering the most cost-effective approach.

In 2025, excluding inflation, our bills will rise just 11p per day. By 2030, average bills will cost £1.57 per day, a total rise of 21p a day over the five-year period. 73% of customers surveyed accepted our plan.

To continue to keep costs low for our customers, as well as unlock opportunities for our region to grow and prosper, companies, regulators and shareholders will need to work together in an open, collaborative way.



Resilient to the risk of drought and flood

As the second most challenged region in the country for climate change, we will safeguard future water supplies, enabling the thousands of new homes needed to be built, and for businesses to continue without fear of water restrictions and resilience-based interruptions.

In collaboration with our Strategic Pipeline Alliance (SPA) partners, over the next five years we will connect more of Suffolk and Norfolk to our strategic interconnecting water supply pipelines. We will also develop two new reservoirs to the point where they are ready to enter construction.

Our regional planning body, Water Resources East (WRE), has identified the need for these new reservoirs in the Fens and Lincolnshire, both sized at 55 million cubic metres, to help meet the region’s future water needs. The reservoirs will serve multiple purposes including alleviating flood risk, supporting agricultural irrigation to provide food security, provide amenities, and enhance biodiversity value.

However the challenges of creating infrastructure on this scale are significant. Since 2012 consenting timetables for Nationally Significant Infrastructure Projects (NSIPs) have increased by 65%, moving from 2.6 to 4.2 years on average, and the rate of judicial review has increased to nearly 60% from a long-term average of 10%. Leadership from government will be needed to help ensure these vital assets can progress rapidly through the planning and construction processes and deliver much-needed resources to the region.

We are already mitigating against the risk of flooding using nature-based solutions such as Sustainable Urban Drainage Systems, with plans to create a further 52 in the next five years.

There is also a pressing need to make vital assets resilient and fit for the future. In keeping with the forward-looking risk assessment approach to capital maintenance, called for by the National Infrastructure Commission (NIC) and Competition and Markets Authority, we are proposing to invest £184 million over the next five years. This will renew 688km of water distribution mains, as part of a £1.64 billion investment programme to renew 75% of our climate vulnerable mains by 2060.

Enabling sustainable economic and housing growth

We will work to balance demand for water with supply by continuing to drive down leakage rates, which are already one of the lowest in the country. We are aiming for a 38% reduction in leakage by 2030 from our 2017/18 baseline. We will support our customers to reduce per capita consumption of water to 124 litres per person a day by 2030, a 6% reduction from 2025, supported by our ambitious roll-out of smart meters across all households.

We will continue to work in partnership with central and local government to support sustainable economic and housing growth in the region. We are proposing to relocate our Cambridge Waste Water Treatment Plant to enable the regeneration of North East Cambridge. The relocation will make way for more than 5,600 new homes, one million square feet of commercial space and thousands of new jobs.

With ongoing investments in infrastructure and a commitment to supporting British businesses, the water industry can be a catalyst for sustainable growth and job creation. In 2022/23, Anglian Water had a total expenditure of £1.3 billion, with our procurement spending estimated to generate more than £1.1 billion of economic output in the supply chain. More than £268 million benefitted local economies. We also directly employ more than 5,000 people and indirectly employ an additional 4,000 staff through our alliance partner companies.



What our 2025-2030 business plan will deliver for the region we serve



Work with others to enable significant improvements in ecological quality of catchments

It is imperative we mitigate the impacts of climate change on the environment. We are prioritising investments to support river water quality and deliver more nature-based solutions to enhance natural capital in the region. Nearly £1 billion has been earmarked for reducing storm overflow spills. By 2030, we aim to further reduce the total number of pollutions by 40%, and work with others to reduce the risk of unflushable materials entering the sewer network. Through our Get River Positive programme, we are working in partnership with farmers and other sectors to reduce diffuse pollution.

We will create an area of treatment wetlands the size of 100 football pitches. Treatment wetlands not only alleviate challenges such as flooding and nutrient loading in rivers, but also provide habitats for nature and overall biodiversity net gain, reduce capital carbon, and unlock opportunities for sustainable housing growth through nutrient neutrality.



Underpinning all of these schemes is our commitment to significantly reducing the amount of water taken from the environment, with all groundwater abstraction licences being capped where practicable to historical peak volumes. By 2030, abstraction from environmentally sensitive sites will reduce by a further 89 megalitres a day, and we expect to close a further two sources in the Norfolk Broads.

To maximise opportunities to deliver nature-based solutions, our Advanced Water Industry National Environment Programme (A-WINEP) will see us develop new ways of collaborating with environmental organisations, communities and citizen scientists, to understand the outcomes most important to local communities in a specific area. We believe we will achieve most by aligning our own investment with other funding such as agricultural grants, environmental markets, and wider corporate and philanthropic finance.

A carbon neutral business

We will continue to deliver our Net Zero Strategy. We are proposing to invest £153 million to reduce process emissions of nitrous oxide and methane at 17 of our largest Water Recycling Centres, as these are our most significant remaining challenge to achieving net zero. By 2030 we will have reduced our capital carbon by 70% compared to 2010, and achieved a 20% reduction in the carbon from concrete.

We will upgrade three sludge treatment centres to export biogas to the grid. While our Circular Economy Strategy innovates across sectors to turn waste streams into further high-value, low-carbon opportunities, including hydrogen production from treated effluent.

Across our plan, we are looking to build in climate adaptation, using low-carbon and nature-based approaches to infrastructure, as well as investing to build in resilience across our assets and networks.

In response to the more localised challenges, outlined on pages 20-21, our targeted investments over the next five years include:

Net Zero

We will measure, manage and reduce GHG emissions through modifying the treatment processes at 17 Water Recycling Centres (WRCs) including a **£12 million** investment at **Dunstable WRC in Bedfordshire** and **£21 million** at **Great Billing WRC in Northamptonshire**. We will invest **£9 million** at **Whitlingham Trowse WRC in Norfolk** to upgrade the biogas we produce there to biomethane that can be exported to the natural gas grid, which by displacing fossil fuels will deliver a carbon emissions reduction.

River and bathing water quality

We will invest **£2.3 million** at **Tollesbury WRC in Essex** to improve the water quality in the shellfish harvesting areas in the River Blackwater by adding UV disinfection. We will invest **£31 million** to add 11 new filters and dosing plants and create 2 new wetlands to limit phosphorous to the receiving watercourses at **13 WRCs in Buckinghamshire**. We will also invest **£9.3 million** into UV disinfection at **Boston WRC in Lincolnshire** to protect shellfish in The Wash, and **£5 million** at **Melton and Woodbridge WRCs in Suffolk** to improve the water quality in the bathing areas of the River Deben. And we will invest **£93 million in Essex** to construct storm tanks and sustainable drainage systems (SuDS) to help make Southend and Great Yarmouth international exemplars for surface water management, reducing storm overflows and improving bathing water quality.

Sustainable growth

We will invest **£19 million** in **Gedney Hill in Lincolnshire** to remove private sewerage systems which have been shown to be harming the river and connect 620 properties to the sewerage system for the first time. This involves the laying of more

than 12 km of new sewers and rising mains, and construction of new pumping stations. We will invest **£4.3 million** to provide a public sewer for 40 connectable properties at **Crafton in Buckinghamshire** discharging to Mentmore WRC. We will invest **£8 million** to increase drainage capacity in **Peterborough in Cambridgeshire** to deal with population growth, including the laying of new sewers and construction of SuDS.

Resilience

Across the region, we are investing in a new network of hundreds of kilometres of large-scale interconnecting pipelines and upgrading existing infrastructure which will allow water to be moved from wetter areas in the north to drier areas in the south. We will increase pumping capacity at multiple sites so that additional water can be pumped into supply from a new strategic pipeline to keep taps running and minimise the impacts of future droughts. This includes investing **£2 million** at **East Harling Water Treatment Works (WTW) in South West Norfolk** and **£2.7 million** at **Bunwell WTW in South Norfolk**.

Drinking water quality

We will invest **£10.1 million** at **Grafham WTW in Cambridgeshire** and **£11.5 million** at **Wing WTW in Rutland** to continue enhancing drinking water quality and reduce risk from chemicals like nitrates, lead and PFAS (so-called ‘forever chemicals’). In **Suffolk** we will invest **£7.1 million** at **Risby WTW** and **£7 million** at **Twelve Acre Wood WTW** in nitrate removal plants to maintain the supply of wholesome water to customers.

These are just a few examples of what our plan hopes to achieve. Find out more at anglianwater.co.uk/about-us

6 Conclusions and calls to action

The Thriving Index helps shine a light on the complexity of the challenges that exist across the counties and sub-regions served by Anglian Water. It complements and reinforces what we have heard from our customers and stakeholders and has helped us create a plan for the next five years, which is founded upon the region’s needs.

Our plan sets out a shared vision for our region, and we can’t achieve it alone. There is already a huge amount of energy and collaboration that we can tap into. The East of England APPG, local authorities, Chambers of Commerce, CBI, Eastern Powerhouse, and many more are working to promote this region.

However the scale of the change should not be underestimated. We know that water companies will need to do things differently. Here at Anglian Water, we are trialling new ways of working to achieve greater outcomes. For example, through our A-WINEP, we will demonstrate that partnership working – collaborating with environmental organisations, communities and citizen scientists and taking

a place-based approach – can deliver greater benefits for the environment and society than we could deliver alone.

To achieve broader environmental outcomes, we propose aligning our own investment with other funding such as agricultural grants, environmental markets, and wider corporate and philanthropic finance. An example of this is our work with Norfolk County Council, the Nature Conservancy and WRE, to establish Norfolk as a global reference point for nature-based solutions to water security challenges. We have developed governance models allowing the blending of different funding sources to achieve landscape-scale benefits in line with the objectives of all the partners.

We believe we can achieve more from such approaches in the future. But for our work, and that of our partners, to be truly effective will require transformation in policy and regulation.

The NIC is clear that: “it is no longer appropriate for investment to function on a ‘just in time’ basis as envisaged in current regulatory models. To keep pace with the rapid action needed to reach net zero and build climate resilience, investment ahead of need is essential.”



Based on the Thriving East analysis, we believe action is needed in the following key areas:

1. Investment in water resources to unlock growth and protect the environment

There are significant competing demands on scarce water resources, with the needs of different users having to be traded-off against each other. 15% of water demand in the Anglian Water region already comes from non-households, and we are having to reject requests for additional water for industrial and business use. Without effective action, lack of water resources could undermine industrial development and decarbonisation. The Government aims to produce 10GW of low-carbon hydrogen production capacity by 2030, a target which on the South Humber Bank could require 60MI of water a day by 2050. Regional water resource plans set out how current and future needs can be met – regulators, Government and industry now need to collaborate to identify how these needs can be efficiently and equitably delivered, including who delivers the required infrastructure and who takes on the delivery risk.

2. Resilient infrastructure

As a region at the forefront of climate change, we have a pressing need to ensure infrastructure is resilient to the challenges of the future. The NIC has called for the government to produce by 2025 “outcome-based resilience standards for energy, water, digital, and transport services”, to be reviewed every five years and reflected in regulatory settlements. It is essential that infrastructure providers are able to invest based on the needs of the future not the past, to reflect the connectedness between sectors and ensure that infrastructure is resilient to climate change.

3. Accelerated infrastructure development

Whether that’s for energy, water, transport or digital, current processes for investing in new infrastructure are too slow and too uncertain. The region needs support from Government to speed up the delivery of the infrastructure of the future, through steps including reform of the planning system, clear and regularly updated National Policy Statements, and policy changes which attract investment.

4. Support for blended finance

The challenges facing our region will require organisations to work together at a scale not seen before. By bringing together private and public funding to deliver public good we can unlock wider benefits from investments, which will help to accelerate action to address the challenges we face. For this approach to work, environmental markets need to be operating well and regulation needs to support partnership working. The Government has already made some progress, with the updated Green Finance Strategy and the Nature Market Framework, but more urgent support is needed to give confidence to investors and enable the blended finance approach to scale up rapidly.

The Thriving East report pinpoints the challenges facing the region over the next 20 years, as well as some of the opportunities we have to address them. But more than anything, we hope that it acts as a rallying cry to help bring together everyone interested in delivering a prosperous, thriving future for the region.

For more on the methodology, visit our website

www.anglianwater.co.uk/about-us/our-strategies-and-plans/thriving-east/

Key links and sources used in this paper

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