A vision for our coasts and rivers

An update for 2025

NORTHUMBRIAN WATER *living water* | ESSEX&SUFFOLK WATER *living water*

Foreword

We have made great progress in tackling pollution and enhancing the precious water environment in our regions in the past year. We are particularly proud to have introduced world-leading technology and invested over £20 million in preventing pollution with our Smart Sewers project.

Our commitment to the water environment has driven significant progress in preserving the natural beauty of our rivers and coasts. This report showcases the strides we have made in fulfilling our pledges and the positive impact these efforts have had on our communities and environment.

Our ground-breaking innovative Smart Sewers project uses AI to predict where rainfall may build up in our sewers to reduce discharge from our Storm Overspills during heavy rain. More details are in a case study further in the report.

We are also leading the industry in achieving zero serious pollution incidents for the third year running.

We fully commissioned Event Duration Monitors (EDMs) in early 2024. These are now operational on all our storm overflows, achieving 100% monitoring coverage.

This milestone allowed us to launch an interactive digital map, providing near real-time information on storm overflow operations.

The map, developed with environmental partners and customer feedback, has enhanced transparency and accessibility for our stakeholders.

Our targeted action plan to reduce spills from storm overflows has already shown promising results. Despite some challenging weather conditions, we are very pleased to have decreased the average number of spills per overflow.

We are now going further by introducing final effluent, in-river upstream, and downstream monitoring at our larger wastewater treatment works. This initiative, supported by funding from our regulator, aims to install a total of 1,334 monitors across the region over the next ten years.

We've been investing significantly in improving discharge compliance and have seen marked improvements over the past 6-10 months. Our management team remains focused on exceeding these performance expectations and delivering the highest standards of service to our customers.

Of course, it is not possible to tackle these issues alone. We collaborate with a number of important partners, including the Environment Agency, Natural England, The Rivers Trust, and Catchment Partnerships. Together, we have worked to eliminate impediments to our rivers achieving good ecological status caused by our operations.

This includes delivering on the Storm Overflows Discharge Reduction Plan, Water Framework Directive, and Habitats Directive. Over the past year, we have identified key issues and incorporated them into our Business Plans, ensuring that our actions align with our long-term goals.

Through our strategic partnership with The Rivers Trust, we have focused on catchment and nature-based solutions. This collaboration has led to significant improvements in river water quality across Northumberland, Wear, and Tees. We have engaged with local delivery partners and experts to address regional challenges and enhance the water environment.

Our efforts to achieve 100% of coastal bathing waters at Good or Excellent by 2030 have made substantial progress. We completed all investigations into bathing water quality at designated beaches in our region. We continue to work with the Environment Agency and local authorities to improve water quality at key sites.

A lot of the activity in this report relates to Northumbrian Water, where we provide both water and wastewater services. In Essex and Suffolk, we are a water only company. The Bluespaces programme, which covers both of our operating areas, has been a resounding success, with numerous projects delivered across our regions. We have invested nearly £1m in Bluespaces. Benefits of the schemes including planting 19,000 trees and creating 417 hectares of new wetland.

As we move forward, we will continue to build on these achievements, collaborating with partners, investing in innovative solutions, and striving to create a better environment for our communities and future generations. Together, we are making a difference

Richard Warneford, Wastewater Director

Our responsibilities and plans

We have a number of long term strategies and plans that help us deliver our services into the future. Then these are delivered through our business plans.

Long-term strategy

We published our long-term strategy for the 2025-50 period in September 2023. The strategy sets out a series of ambitious goals for the improvements we want to see for our rivers and coasts over that time. This includes reducing spills to the environment, increasing biodiversity and achieving carbon net zero. It also sets out the new investment we need to make to deliver these improvements, as well as the impact this could have on bills and how we would seek to make them affordable for all our customers. It examines how things might change under different future scenarios, taking into account uncertainties like climate change, growth and other factors. Finally, it highlights the key choices we must make in the future to ensure that we deliver the long-term improvements customers and stakeholders want to see in the most efficient and effective way.

Click here to view our Long-term strategy

Environment Strategy

This document presents our Environment Strategy out to 2050. The environment is at the heart of everything we do as a business, so our role in protecting the environment is not new for us and forms part of our company's purpose. This strategy builds on what we have already achieved and sets our direction for the future.

We have broken down this journey into five Environmental Priorities that work together to contribute to our ambition:

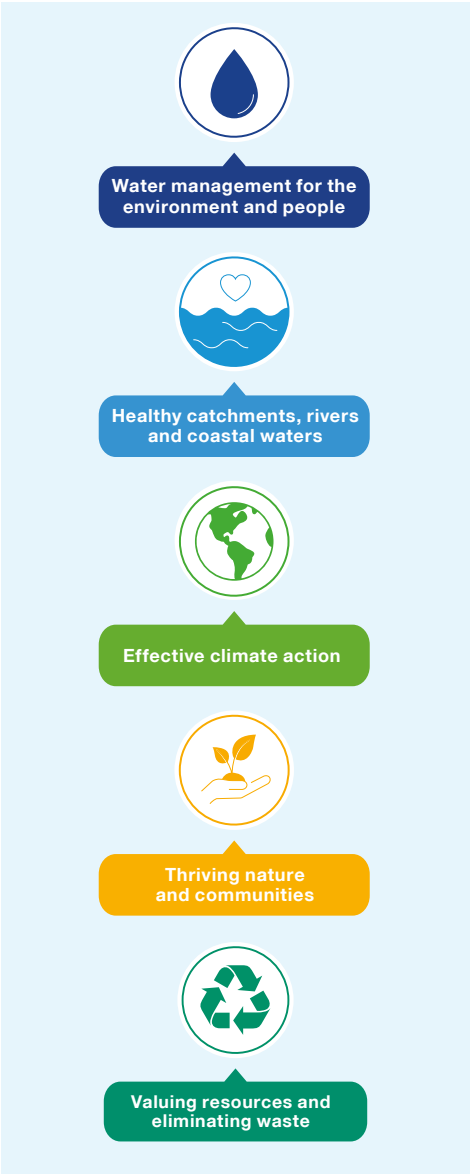
- Water management for the environment and people;
- Healthy catchments, rivers and coastal waters;
- Effective climate action;
- Valuing resources and eliminating waste; and
- Thriving nature and communities.

Each Environmental Priority consists of several focus areas, and our strategy outlines the commitments we are making across these.

We will monitor our progress against these commitments and measure and report our success in delivering positive outcomes.

We will review this strategy every five years - or sooner if triggered by a significant policy, technological or environmental change - to make sure our priorities are up to date with our stakeholders' and wider environmental priorities

Click here to view our Environment Strategy



Drainage and Wastewater Management Plan

Our Drainage and Wastewater Management Plan (DWMP) helps us to prepare for changes to the environment in our region. Our plan looks more than 25 years into the future and sets out what we will need to do to keep our wastewater systems fit for today and the future.

In May 2023 we published our latest DWMP. The plan identifies how we will extend, improve, and maintain a robust and resilient drainage and wastewater system considering the pressures of climate change, population growth and growing customer expectations. The DWMP sits within the wider context of our Long-term strategy as well as a number of statutory or legal requirements such as the Storm Overflows Discharge Reduction Plan (SODRP) and the government's 25 Year Environment Plan (25YEP).

Through our DWMP we have developed a preferred plan that incorporates all of the significant investments to meet new statutory requirements and additional investments to improve performance where required.

Click here to view our draft Drainage and Wastewater Management Plan

Our responsibilities and plans

Water Resources Management Plan

Our **Water Resources Management Plans (WRMPs)**, covering both our Northumbrian and Essex & Suffolk operating areas, were published in October 2024. Our plans to 2050 forecast how much water we will have available to supply our customers, taking account of future droughts, climate change and the need to protect the environment. We also forecast how much water our customers will need taking account of future population growth.

By comparing our supply and demand forecasts, we have confirmed that in our Northumbrian Water operational area we will have reliable and sufficient supplies of water to meet customer demand over the planning period. However, we must still ensure that we use water efficiently. An important part of this is reducing leakage from our water pipes as well as providing our customers with advice on how they can reduce the amount of water that they use. Between 2025 and 2050, we are planning to reduce leakage from our water pipes by 55% in our Northumbrian Water region and 40% in our Essex & Suffolk Water region.

When comparing our supply and demand forecasts in our Essex & Suffolk Water operational area, we have identified the need for a twin-track approach, whereby as well as our strategies to use water efficiently, we must also invest in new water supply schemes to ensure a sufficient and environmentally sustainable supply of water into the future.

We have worked closely with our regional Water Resources groups, **Water Resources North (WReN)** and **Water Resources East (WRE)** throughout the development of our plans. The regional groups take a cross-sector approach to water resources and integrated water management planning by bringing together public water supply companies, the agricultural and energy sectors, and other water users. By doing so, they facilitate sustainable growth across our operating areas.

Click here to view our Water Resources Management Plans

Business Plan

Every five years, Ofwat carries out a price review for all water and wastewater companies. We are required to produce a Business Plan that sets out all the things we want to deliver for our customers, such as reductions in flooding, or improvements in customer service. We submitted our Business Plan in October 2023 and received Ofwat's final determination in December 2024. This outlines Ofwat's views on how much revenue we can collect from customer bills, and what level of service we need to provide to our customers in return.

In February 2025 we asked Ofwat to refer its final determination to the Competition and Markets Authority (CMA) as it didn't provide us with the necessary means for the successful delivery of our Business Plan for 2025-2030.

Our plan – which was judged to be of a 'high quality' by Ofwat – was informed by extensive consultation with customers, with a clear majority of 74% indicating that they supported it. We designed our plan to be ambitious and stretching, proposing a much-needed step-change in investment to deliver high-quality water and wastewater services, restore ageing assets, and ensure resilience for the long-term in the face of more extreme weather conditions. This is vital to support economic growth and to protect critical national infrastructure and the environment for the future – in line with the Government's wider objectives for the water sector.

We also heard a clear message from our customers that the plan must be mindful of the ongoing cost of living challenges they are facing. That is why our plan retained a strong focus on efficient management of costs. The final Business Plan we submitted combined our largest investment programme ever, with the lowest price rises across the country, alongside a four-fold increase in support for customers facing cost of living challenges.

However, despite our repeated representations following the Draft Determination, Ofwat arrived at a final determination that strikes the wrong balance between the need for investment and the pressure on bills. In rejecting our request for £160m on asset health investment, the FD represents a misjudgement in the minimum amount of funding needed to adequately ensure the resilience of our assets. Ofwat has not allowed sufficient funding for us to adequately provide power resilience across our wastewater assets which significantly increases the risk of pollution incidents.

Following an independent review by the CMA, we believe our appeal will result in a redetermination which allows us to implement our investment plans in full. In the meantime, we will continue to make investments to tackle the most pressing issues raised by our customers, such as reducing the operation of storm overflows.

Click here to view our Business Plan

> **Our plan – which was judged to be of a 'high quality' by Ofwat – was informed by extensive consultation with customers, with a clear majority of 74% indicating that they supported it.**

Key data

Measure storm overflows		2021	2022	2023	2024
Permitted Storm Overflows	Overall number of SOs operating under permit in our network	1,567	1,564	1,565	1,559
Storm overflows with EDM	SOs with event duration monitoring fitted	1,542	1,542	100%	100%
Average number of spills	Number of times each SO spilled, on average	25.3	20.3	30.1	26.3
Average duration per spill event	Length of time each SO spill lasted for, on average	6.0 hours	3.6 hours	6.0 hours	6.0 hours
Total number of spill events	Overall number of times one of our SOs has spilled	36,483	29,697	46,492	40,712
Average percentage of time operating (spilling)	How much time a SO was spilling for on average	1.7%	0.8%	2.1%	1.8%

Click here to see how we are reducing spills from Storm Overflows

Environmental Performance Assessment		2021	2022	2023	2024
EPA	An overall assessment of environmental performance by the Environment Agency, graded from one to four stars	Four star	Three star	Three star	EA to confim later in 2025

Click here to find out more about our environmental performance

Pollution		2021	2022	2023	2024
Serious pollutions	Pollutions classed as Category 1 (major, serious, persistent and/or extensive impact) or Category 2 (significant impact) by the Environment Agency	1	0	0	0
Less serious pollutions	Pollutions classed as Category 3 (minor or minimal impact) by the Environment Agency	68	60	99	117
Pollution incidents	Incidents per 10,000km of sewer	23	20	33	39
Misconnections		**2021**	**2022**	**2023**	**2024**
Polluted surface water outfall (PWSO) initial investigations completed	Investigations of polluted surface water outfalls where there is a suspected misconnection	66	83	64	49
Property surveys completed	Number of individual properties surveyed as part of investigations into possible misconnections	1646	1785	1,138	1,233
Properties with misconnections identified	Properties where a misconnection is found where we work with the property owner to find a resolution	173	199	172	215
Water Industry National Environment Plan (WINEP)		**2021/22**	**2022/23**	**2023/24**	**202425**
WINEP deliverables completed (cumulative)	Number of environmental improvement schemes agreed under the Water Industry National Environment Plan for 2020-25 that have been completed	328	439	549	681

Our pledges

Pledge 1 - We will work with the Environment Agency, Natural England, The Rivers Trust and Catchment Partnerships to identify, and have plans in place to eliminate, all impediments to our rivers achieving good ecological status caused by our operations.

What does this mean?

We will develop and implement a long-term plan to remove negative environmental impacts of our assets. This will include delivering what is asked of us under the Storm Overflows Discharge Reduction Plan, Water Framework Directive and Habitats Directive. We recognise the importance of working with partners to achieve our shared aims.

What have we done so far?

We've worked with the Environment Agency to identify the key issues that we need to address, and to consider how these should be included in our company Business Plans. Our Drainage and Wastewater Management Plan, also sets out how we plan to address environmental impacts over the next 40 years through managing our wastewater system.

We have included key improvement actions as Water industry national envrionment programme (WINEP) schemes in our Business Plan for 2025-30, and have identified future actions in our long-term planning, some of which will be informed by investigations during 2025-30.

In the past year, we have completed our Water Framework Directive 2020-25 investment schemes, including enhancements at sewage treatment works to improve river water quality and good ecological status through reducing phosphorus (P) entering watercourses. We have started enabling work for key improvement actions included in our Business Plan for 2025-30, and are planning for delivery of investigations to identify future actions in our long-term plans.

What will happen next?

Over the next five years, we will work on projects identified in our Drainage and Wastewater Management Plan. These projects aim to improve our drainage and wastewater systems. Additionally, we will continue to reduce the amount of phosphorus that enters rivers by making improvements at our sewage treatment plants.

We will also be investigating river flows to understand the impact of our abstractions on ecological status and identify any changes needed. We will continue to explore whether there are other actions we can support to improve ecological status and achieve wider environmental outcomes for the North East region.

> **We've invested in enhancing sewage treatment works to improve river water quality.**

River Blyth, Northumberland

Pledge 2 - We will invest in monitoring to provide 100% near real time data on storm overflows by 2023.

What does this mean?

All our storm overflows will be fitted with monitoring to detect any spills to the environment. Data from these monitors, showing when spills take place, will be made available in near real time – within about an hour of a spill occurring.

What have we done so far?

In 2023, we successfully installed Event Duration Monitors (devices used to track how often and for how long storm overflows are active) to the remaining storm overflows in our network.This means we have achieved our goal of having 100% monitoring of these overflows.

Our interactive digital map was launched in April 2024 and provides near real time information on when and where there are storm overflows operating and where the most recent discharges have occurred.

The storm overflows map was built and developed with the help of environmental partners from across the region including the Tyne Rivers Trust, Tees Valley Nature Partnership and Wear Rivers Trust.

Customer feedback played a crucial role in determining how the map would be used. A customer survey was conducted, and through collaborative efforts to enhance data presentation, we made sure the map is as user-friendly as possible.

From November 2024, the same data from our map was also included in the National Storm Overflows Hub – a world first interactive map showing the operation of every single storm overflow in England. The Hub has been developed by Water UK, the water industry trade body representing every water company in the UK. It was led by Stream in partnership with a cross-industry group working to drive transparency, innovation and collaboration through open and shared data.

An independent steering group provided expert advice with representation from the Rivers Trust, Surfers Against Sewage, the Consumer Council for Water, the Environment Agency, Ofwat and the Department for Environment, Food and Rural Affairs (DEFRA).

What will happen next?

We will continue to review feedback we receive about our interactive storm overflow map and look to make further improvements on the current system.

> **Data from our interactive digital storm overflow map used for world-first national interactive map.**

Pledge 3 - We will introduce final effluent, in-river upstream and downstream monitoring to get a greater understanding of environmental impacts of treated water by 2030.

What does this mean?

We will install real time continuous water quality monitors at our larger wastewater treatment works monitoring their environmental impact upon the receiving water body.

What have we done so far?

We have successfully secured funding from our regulator for our 2025-30 Business Plan that will allow us to install a total of 1,334 monitors across the region over the next ten years, at both our sewage treatment works and storm overflows. Of these, 390 monitors will be prioritised for installation within the next five years.

What will happen next?

We will deliver these 390 monitors between 2025-30. In advance, we continue to gain key learnings from 31 monitors which have been successfully deployed at our highest priority storm overflows. This is allowing us to understand potential challenges such as land access, security, communication issues and maintenance of these monitors, allowing us to develop the most robust plan to meet this pledge from 2025 onwards.

> **We've started installing 390 water quality monitors in priority locations.**

Pledge 4 - We will implement water quality monitoring at the highest priority storm overflow locations by 2025

What does this mean?

We will implement continuous water quality monitors at our highest priority storm overflow locations. We have identified these locations by assessing a combination of data – including where rivers have 'Poor' or 'Bad' status under the Water Framework Directive, where our storm overflows are spilling more than 10 times a year, and where there are other factors, such as an environmental impact under the Storm Overflow Assessment Framework, where our assets are a reason for not achieving good status (RNAG), or where there is low dilution.

What have we done so far?

Originally, we identified 22 high priority storm overflow sites which required the installation of 27 monitors to be installed based on the current WINEP guidance.

This has recently been increased to include an additional two assets adding four new monitors, maximising our learning to support our 2025-30 delivery strategy.

The 31 monitors have now been installed by three different suppliers deploying a combination of fixed and portable designs in urban and rural locations.

What will happen next?

We continue to learn in every aspect of these installations from vandalism, equipment reliability, public interest to understanding the data and its trends.

> **We've installed 31 monitors at high priority storm overflow sties.**

River Tweed, Northumberland

> Our Smart Sewers project is having a positive effect on preventing storm overflow spills.

Pledge 5 - We will reduce spills from storm overflows to an average of 20 per year by 2025. We are confident that we will have fewer than 20 spills in 2025.

What does this mean?

We will reduce the average number of spills from our storm overflows, from a baseline of 25.3 in 2021. This is calculated from our annual Event Duration Monitoring report to the Environment Agency and is as summarised in their report. Our interim targets are to have below 23 spills in 2023 and below 21.5 in 2024.

What have we done so far?

Our average spills decreased to 26.3 per overflow in 2024 from just over 30 spills on average in 2023. Both years have been significantly impacted by above-average rainfall and an increasing number of named storms classified as ‘exceptionally high’ by the Environment Agency, equivalent to once every 20 years. This is in comparison to 2022 with an average of 20.3 spills per overflow with 35% less rainfall than in 2023.

With these changes in weather patterns, we recognised there is further work to do to hit this target sustainably.

Our Smart Sewers project is already having a positive effect on preventing storm overflow spills. As we roll it out further across our region, we are confident it will lead to further reductions. We were proud to introduce this world-leading technology to benefit communities in our region.”

We are implementing our targeted action plan to tackle spills, and this is on top of existing investment to deliver improvements, such as through our WINEP programme and schemes to accommodate population growth.

In 2024, we continued our sewer network work, using CCTV to identify and remove obstructions that could restrict wastewater flow. This includes removal of siltation, cutting tree roots out and identifying structural issues. Permanent solutions are then programmed in with sewer pipes being lined to stop tree roots clogging up the sewer again, fixing structural issues (disjointed or cracked sewers) and putting in place improved maintenance plans to revisit and make sure the siltation hasn’t returned/remove it again.

Our teams and contractor partners have surveyed over 305 storm overflows to remove any restrictions in our sewer pipes (such as tree roots) and fixing any problems that are found. This also includes a proactive programme of maintenance and rehabilitation of flow devices to make sure the right amount of flow is going through our network.

To drive further spill reduction improvements, we have more than doubled the investment planned and introduced further work to target those overflows spilling most frequently. This has included increased infiltration removal work, fitting flap valves to stop river water entering the system, safely raising the weir height at low-sided overflows to keep more flow in the system and initiated detailed investigations at our sewage treatment works to reduce discharges of stormwater.

We are making sure the capacity in wastewater system is not restricted in any way and we only spill when absolutely necessary due to rainfall, snow melt and infiltration.

What will happen next?

We will continue to implement our targeted plan and monitor the reduction in spills in delivering against this pledge.

We are working with a leading US company to deliver the UK’s first real-time decisions support system for our largest wastewater system on Tyneside. This involves installing new devices and developing a digital twin (a digital counterpart that can simulate, monitor, and analyse the wastewater system in real time. This technology allows for better understanding, prediction, and optimisation of the actual system’s performance and behaviour). This increases our capability to detect issues, manage flows effectively and reduce spills.

Pledge 6 - We will work closely with The Rivers Trust through our strategic partnership and our Thriving Catchments programme (formerly the North East Catchments Hub) to focus on river needs for investment through catchment and nature-based solutions. Thriving Catchments reflects our expanded, collaborative approach to developing catchment-scale improvements across the region. As part of this work, we will identify at least two inland bathing water sites where applications for designation can be made at the earliest opportunity. We are proud that already 95% of the North East population lives within an hour's drive of a beach with Good or Excellent bathing waters.

What does this mean?

We have a developing strategic partnership with The Rivers Trust, to help us work effectively on catchment challenges. This includes identifying opportunities to deliver catchment and nature-based solutions.

This collaboration has a particular focus on delivering improvements to rivers together with partners, but there are also opportunities for working together on coastal waters and beaches. The initial phase of our work under the strategic partnership to support 2025-30 business planning was referred to as the North East Catchments Hub. The next phase from 2023 saw us expanding our activities into a long term working commitment through the Thriving Catchments initiative.

What have we done so far?

We have developed a close working relationship with The Rivers Trust, since we came together to establish our strategic relationship in 2022 around a shared ambition to enhance the water environment. This supports our work with local delivery partners in the region.

Over the past two years, we have been working on large-scale projects to improve the quality of river water in 50 different areas across Northumberland, Wear, and Tees. We have been looking for ways to manage phosphorus levels in these areas, as this approach can lead to better results than just making improvements at the end of the sewage treatment process.

Our work has brought together ourselves, The Rivers Trust and six local delivery partners, drawing in around 30 experts to address our regional challenges, considering catchment solutions, opportunities for wetlands and rivers restoration, agricultural engagement and improvements, monitoring, data and evidence, and the role of ecosystem services and environmental markets.

By taking an integrated approach to catchment planning, and implementing our Environment Strategy principles of Partnership Mindset, Natural Solutions First, and Systems Planning, we will create wider environmental benefits for better customer value.

We supported an application from the Clean Tyne Group for an inland bathing water at Wylam, Northumberland, but this was not approved by Defra. We also supported the application to designate the South Tyneside estuary / coastal site at Littlehaven. Defra's criteria for applications was updated after the Wylam application to make it clear how many bathers needed to be using the water - 100 on any day. Unfortunately, Wylam had a lot lower numbers using the site. We have since supported the groups events and research with Newcastle University into the quality of rivers for recreational activities.

What will happen next?

We are considering the next stage of our partnership to understand how we can work together effectively to drive change to meet shared environmental objectives and support our partners in our North East region. Delivery of some of our 2025-30 catchment improvements and investigation schemes will be linked to our work with others through Thriving Catchments, harnessing the benefits of delivering catchment work with others.

Our understanding of what we can achieve through Thriving Catchments and where we can best be effective by working together is still developing, and we expect this partnership to strengthen and deliver more benefit for ourselves, The Rivers Trust, local delivery partners, and the region as we plan our activities into the future.

> **"We have been working on large-scale projects to improve river water quality in 50 different areas across Northumberland, Wear and Tees.**

Embleton bay, Northumberland

Northumberland coast

Pledge 7 - We will work with partners to achieve 100% of coastal bathing waters at Good or Excellent by 2030.

What does this mean?

We will target our operational work, additional investment and partnership work to achieve Good or Excellent bathing water quality, as assessed by the Environment Agency, at all coastal bathing water sites in the North East.

At present, 33 out of 35 are rated Good or Excellent. Of the two beaches not meeting these ratings, one of them - Cullercoats – is not thought to be due to our assets or operations and the other one – Littlehaven, South Shields – was designated for the first time in 2024.

What have we done so far?

We completed all 12 investigations into bathing water quality at designated beaches in our region between 2020-25. A further six have been identified in our Business Plan for 2025-30 with the Environment Agency that have shown some deterioration. These will be delivered by April 2027.

We are continuing to work with the Environment Agency and local authority to investigate how quality can be improved at Cullercoats. Here contaminated groundwater is likely to be that primary cause. We diverted polluted groundwater from a local authority culvert into our network in December 2022. Recommendations to drill monitoring boreholes from our hydrogeological study completed in 2023 are now being taken forward in partnership with the local authority and the Environment Agency. Once drilled, we will be able to understand the pathway, flows and quality of groundwater entering the bathing water.

Our planning for investment to improve bathing water quality to 2030 includes the completion of an investigation at Littlehaven. This was designated as a bathing water in 2024 following a consultation by Defra where we supported the application following our work with the local authority and the Environment Agency. The study will determine the solutions and investment required to improve this new bathing water towards meeting the required standards.

Bathing water storm overflows will also be improved as a significant part of our £1.1bn plan to meet the Government's Storm Overflows Discharge Reduction Plan, such as at Berwick-upon-Tweed, Seaton Carew, Redcar and Marske. We are going further at Berwick sewage treatment works where we plan to install ultraviolet disinfection.

With agreement from Ofwat, we have already started work on an investment of c.£120m to reduce spills from storm overflows at Berwick-upon-Tweed and Spittal beach by 2030.

What will happen next?

We will continue partnership working, particularly at Cullercoats and Littlehaven to improve bathing water quality.

We will conclude our early start work on investment to reduce spills from storm overflows, such as at Berwick, and move into the next stage of our storm overflows and bathing water programmes to 2030.

> **33 beaches in our region are good or excellent.**

Pledge 8 - We will work in partnership to improve 500km of bluespaces (such as river banks and accessible water environments) for the public to enjoy in our regions by 2030.

What does this mean?

We developed a new approach towards improving the water environment and a new investment scheme for 2020-25. This approach, which has become our Bluespaces programme, allows us to work with others to improve areas of the water environment that are accessible for our customers. We have an ambition to improve 250 km of bluespaces by 2025 and are aiming to double that in the next five years, linked to our company pledge to improve 500 km of bluespaces in our regions by 2030.

What have we done so far?

We have exceeded our target for 2025, improving 118.3km of bluespaces. We have delivered nearly 60 Bluespace projects in partnership across our regions, working with local environmental organisations, local authorities, local community groups and land managers. These projects are all evidenced on our website and recorded on the Bluespaces Mapping Portal.

Specific benefits delivered across the 5-year programme include 19,000 trees planted, 6,300 volunteer days, 18,700 members of the public engaged, 417 ha of new wetland created, almost 500 public engagement and training events, and 120 new benches installed. Our co-funding has helped create over 95 fish passage features and tackle 8 different kinds of invasive non-native species (INNS), as well as enhancing access and recreational facilities for local communities.

To date across the five years, we have invested £0.99m in the programme, this has been matched by partner co-funding estimated at the value of £21m.

What will happen next?

The next year will be an exciting time for Bluespaces, as our approach for 2025-30 is supported with significantly increased investment through WINEP. We are planning improvements to make the scheme more efficient and to support delivery partners more effectively. Changes will include a bigger Bluespaces team working across Northumbrian Water and key partners, more funds to improve each km of bluespaces on the ground, and feasibility investment to allow partners to work with us to develop and co-fund the best projects for each region to benefit the environment and our customers.

> **We exceeded our target for 2025, improving 118.3km of bluespaces.**

River Derwent, Northumberland

Pledge 9 - We will double the number of our Water Rangers – our volunteers who are trained to help us monitor environmental conditions around rivers and take action to address wider river issues such as littering, fly tipping or signs of pollution.

What does this mean?

Our Water Rangers scheme consists of trained volunteers who act as our ‘eyes and ears’ on the ground in the community. They patrol rivers and waterways looking out for any issues which could be of environmental concern.

What have we done so far?

The Water Ranger initiative was set up in 2014 with the objective of enlisting community support to help identify potential pollution incidents in the environment at the earliest opportunity.

Up to now the scheme has only run in our northern region. We have about 50 Water Rangers, who monitor more than 50 public access routes covering over 70 kms of streams, rivers and bathing waters across the North East. In total they’ve completed tens of thousands of patrols since the scheme started.

All volunteers receive thorough initial training about what to look out for on their routes and have also received awareness training on flood risk to support the work of the Environment Agency Flood Warden Service.

This proactive approach working closely with our local communities has without doubt helped to prevent and minimise the impact of any pollution threats. .

What will happen next?

We are currently reviewing our Water Ranger scheme, with a view to expand it, in terms of numbers, geographic area and function, working closely with existing Water Rangers with our partners.

We are really proud of the scheme and want to ensure the programme is working as well as it should.

Water ranger

Case Study: Smart Sewers – world-leading technology

Challenge:

We wanted to reduce the number of spills from our Storm Overflows as part of our commitment to improving our water environment. In pledge 5, we outline our commitment to reduce spills from storm overflows to an average of 20 per year by 2025.

Storm Overflows are used by all water companies across the world in heavy rainfall to prevent sewer flooding from taking place in customers' homes. They act as a relief valve on the wastewater network. They are used with Environment Agency consent to protect homes from the devastation that can be caused by internal flooding.

Action:

We invested £20m in setting up a Smart Sewers project. The industry-leading concept is based upon research and proven techniques used in the United States. Working in partnership with US tech experts HydroDigital, we are the first water company to use this technology in the UK and the first in the world to use it at such a large scale.

The smart sewer project is revolutionary. Using AI analytics and sensors, it allows us to control flows of wastewater (a diluted mix of sewage, rainwater, run-off from roads and fields and water from sinks, showers and appliances) through the sewer network, holding back wastewater in areas without rain to ensure there is capacity for rain falling in other areas of the sewer network. It prevents the sewer from becoming overwhelmed and discharging from Storm Overflows when it rains.

We're implementing 31 control sites all across Tyneside that will provide the equivalent storage benefit of adding a five-metre diameter tunnel that is eight kms long.

Impact:

In February 2025, the technology was used for the first time in real life. In the first month it operated on 15 separate occasions during rainfall. We were thrilled with the results. Every single time it operated we were able to prove that it prevented Storm Overflow spills.

Due to the success of the project, we've invested another £5m to expand it further and faster across to the south of the region, with our ambition to deploy it across the North East.

Case Study: Pioneering drone lab-in-a-box technology

Challenge:

We faced significant challenges in monitoring water quality across the North East's rivers and coastal waters. Traditional methods required us to manually collect water samples from various sites, which was time-consuming, especially in remote or hard-to-reach areas. Additionally, adverse weather conditions often hindered the sampling process. We needed a more efficient and scalable solution to ensure timely and accurate water quality assessments.

Action:

In a pioneering move for the utilities industry, we partnered with cloud data experts Makutu and Skyports Drone Services to explore the use of drone technology for real-time water quality monitoring. This initiative, named Project Kingfisher, involved months of research into how uncrewed aerial vehicles (UAVs) could be equipped with sensors, AI, and data analytics to monitor water quality at key coastal and inland locations - a complete lab in a box.

The project began with test flights of drones, which were designed to hover and dip into water to collect data. These drones, operating 'Beyond Visual Line of Sight' but supported by ground observers, were deployed in areas such as Berwick-upon-Tweed, Bishop Auckland, and Blyth. The drones visited pre-programmed water sampling sites, performed key water quality tests, and transmitted the data back for near real-time analysis.

Impact:

The introduction of drone technology has significantly improved our ability to monitor water quality. The drones provided better access to remote areas, reduced our carbon footprint, and enabled the collection of more comprehensive data over a larger area with faster results. The successful test flights validated the use of UAV technology as part of our extensive water quality monitoring programme.

As a result, we are now better equipped to respond quickly to potential water quality issues, ensuring cleaner rivers and coastal waters. The project has also set a new standard in environmental monitoring and sustainability, showcasing the power of innovative technology and collaborative partnerships in addressing ecological challenges.

Case Study: Beach care and aware project

SeaScapes beach tree planting

Challenge:

We wanted to improve the water environment along the Tyne to Tees coast, benefiting its natural heritage and our communities. The challenge was to reduce damaging beach and marine litter, enhance water quality, and increase awareness and pride in our coastal waters and beaches. We needed to engage schools, businesses, and communities in activities that would leave a legacy of local ownership and care for our coastal waters.

> **The project has left a legacy of local ownership and care for the coastal water environment, with engaged communities, businesses, and schools committed to ongoing activities to protect the environment.**

Action:

To tackle these challenges, we launched the Beach Care and Aware project as part of the SeaScapes programme. This project involved coordinating litter picks and surveys across the SeaScapes area to deliver cleaner beaches and raise awareness of the damage coastal and marine litter can do to wildlife and our environment. We engaged schools, businesses, and communities in conversations, activities, and events to enhance and care for our coastal water environment. We also worked with coastal partnerships and partners to reduce water pollution at source and instream, and gathered evidence through coastal water quality monitoring to demonstrate where action was needed.

Impact:

The Beach Care and Aware project has led to significant improvements in the coastal water environment. We have reduced the amount of damaging beach and marine litter, enhanced water quality, and increased awareness and pride in our coastal waters and beaches. The project has engaged schools, businesses, and communities in activities that promote care for the coastal water environment, influencing behaviour and waste management. We have also identified further ways to improve the water environment through community engagement and collaboration with the SeaScapes delivery team.

The project has left a legacy of local ownership and care for the coastal water environment, with engaged communities, businesses, and schools committed to ongoing activities to protect the environment. The Beach Care and Aware project has provided valuable data to develop effective management strategies for beach and marine litter at regional and national levels, contributing to the sustainability of our coastal waters for future generations.

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Cover Image: Bamburgh Castle, North East Coast of England
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