Service Commitment Plan

November 2023

Contents

Introduction

This plan responds to Ofwat's recent assessment of water company performance in 2022/23.

We are assessed by Ofwat each year of the Asset Management Period 2020-2025 (AMP7) against 40 different measures. Ofwat's company performance report looks at a subset of these.

We have met the majority, but not all, of our Ofwat Performance Commitments both this and last year. This report focuses on nine commitments that we know are particularly important to our customers and stakeholders.

This report provides appropriate context and insights about how and why our performance varied last year, the plans we have to address challenges where we have identified this is necessary, as well as forecasts for our performance to 2025.

We take our performance extremely seriously and hold ourselves to account for our customers, stakeholders and the environment through a variety of forums, such as independent scrutiny committees, and reports, such as our integrated annual report where we detail our performance against a full range of measures as well as Ofwat Performance Commitments to form our balanced scorecard.

Importantly, we know what has impacted our performance and we are already taking the necessary action with significant plans in place, particularly for pollutions, flooding and treatment works compliance. In other areas, small adjustments will correct our performance. For example, the extreme weather in 2022 had a domino effect on three Performance Commitments that accounted for more than 70% of the penalty we received. In the absence of such extreme conditions in the first half of 2023, we have seen performance significantly improve.

And, despite not meeting all of our Performance Commitments, we remain sector-leading in some areas such as leakage, yet are still categorised as lagging by Ofwat. We had an equally strong year and top four performance for Per Capita Consumption versus the sector but – like all companies – missed our specific target in 2022/23.

Direct comparison across the industry is difficult because Performance Commitment Levels (PCL) differ between companies. Underperformance against a PCL doesn't necessarily indicate absolute underperformance at an industry level. It does not necessarily mean performance is deteriorating either. Independent analysis from KPMG, ranking absolute performance across all common performance measures, shows us to be in the top 25% of companies in terms of performance every year since 2020. This demonstrates that performance against PCLs does not in isolation reflect the overall quality of service a company delivers.

Finally, we are taking a proactive, data-led approach to gathering a more accurate picture of our operations, rolling out smart technologies to find more leaks, installing smart meters, and delivering a vast network of smart sewer monitors. This mean we are now better sighted than ever before on our baseline performance. This helps us pinpoint challenges we would previously have been unaware of – a clear benefit to customers and the environment. Having greater visibility on our wider performance means we are reporting more insight than we have in previous AMPs.

Working with others

It is therefore crucial that we work with others, like our regulators, to ensure Performance Commitments are consistent and drive the right outcomes. For example, we know customers want to interact with us through digital means – it's easier and more convenient. We've responded by making more digital channels available, but we also know the CMeX measure penalises digital contact and places us at a disadvantage for giving customers the choice they want. We are making the case to Ofwat that this measure should be better aligned with what customers have actually told us, and look forward to working together to drive changes beyond 2025.

Board oversight

The Board has governed the necessary actions required to improve performance and fully supports our immediate and longer-term plans. The Board also recognises that improving performance requires sustained commitment over time.

Current and forecast performance is routinely monitored by the Board, alongside reviewing operational performance including corrective action plans. It meets at least eight times each year – more frequently when required – such as during the development of the business plan for submission to Ofwat. At each meeting, the Board receives a report from the Chief Executive which highlights key performance issues, a report from the Chief Financial Officer (CFO), a report from the Regulation Director and a routine performance report. The CFO's routine report tracks financial expenditure against budget, and the routine performance report tracks performance against stretch targets in relation to Performance Commitments, forecasting a performance outturn at the end of the year.

The Board oversees customer service standards and outcomes for vulnerable customers regularly. Plus, our Independent Challenge Group and Customer Board, which is made up of representatives from various customer and regulatory bodies, provides scrutiny of our activity and plans, and meets regularly with our management Board to share feedback.

Reporting progress

The Board is committed to monitor progress on delivery of the Service Commitment Plan as part of its routine reviews of company performance. We will also share progress on our plan with our Independent Challenge Group. Progress against the commitments we have made in this plan will be reported quarterly. We will report our performance to date against each Performance Commitment and our forecasts for the end of the year. We will also report any revisions to our plan in the light of new information. Our progress reports will be published on our website and we welcome feedback from stakeholders.

A guide to reading this report

Ofwat's Water Company Performance Report for 2022/23 focused on 12 common Performance Commitments, out of the 40 commitments we have set in total. In this plan we have set out how we intend to improve against those nine Performance Commitments where we did not meet the PCL in 2022/23. We have used High/Medium/Low to indicate the relative contribution of each action. To read more on our performance against the full range of commitments, please see our **Annual Integrated Report**.

Some measures are based on calendar year such as Treatment Works Compliance, Pollutions, Internal Sewer Flooding and CRI, and the remainder are financial year, as determined by the measurement period set by Ofwat.

In this report, we have included graphs that demonstrate our historic performance. We have used the earliest date we hold data for, except where the reporting methodology has changed. For example, we've always reported on leakage but the methodology changed from 2017/18 meaning numbers prior to this period are not comparable.

What is a Performance Commitment?

All water companies operate in five-year cycles and performance is assessed by our regulator, Ofwat. In our five-yearly business plans, we propose the levels we can achieve for each Performance Commitment alongside the costs required to achieve those, bearing in mind what customers have told us about their willingness to pay for particular outcomes. In its final determination, Ofwat imposes its own PCLs. If we outperform Ofwat's PCL we recover the costs of having delivered a high level of service. Conversely, if we fail to meet it, customers are compensated. The PCL therefore presents us with an economic incentive: we may not achieve a PCL if the cost of doing so exceeds the reward we would earn or penalty we would avoid.

Collectively, the industry forecasts returning to customers around £750 million on the common Performance Commitments over the five-year period. This is despite spending considerably in excess of the sums that were allowed to them in their business plan determinations for 2020-2025. The industry evidence suggests that many of the PCLs Ofwat set at PR19 will not be achieved.

We chose to challenge many PCLs during our 2019 business plan determination because they either did not reflect the customer priorities we had identified through our engagement activity, or we did not believe the determination allowed sufficient funding to achieve them. We also made this argument to the Competition and Markets Authority.

Performance overview

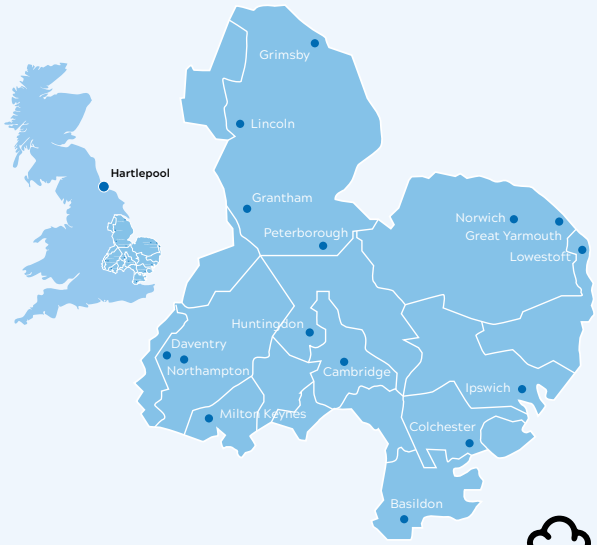
The table below provides an overview of the Performance Commitments we explore in this report, what they measure, our position relative to other water companies in the previous year, and a breakdown of the key activities we're undertaking to address our performance. We're well into year four of Asset Management Period (AMP7) 2020-2025 and many of the actions we're taking to improve performance are already showing strong results. For example, reducing sludge at our water recycling centres is improving compliance. However, we recognise others are taking more time to bear fruit, particularly around pollutions, and we are constantly monitoring to ensure our plans are delivering and adjusting them accordingly.

Performance Commitment	What it measures	Rank in 22/23*	Key activities to improve performance
Per capita consumption	Average volume of water used by each household customer every day	4/17	· Install smart meters to help customers identify leaks in the home · Ensure customers have visibility of their smart meter consumption data · Trial seasonal pricing to incentivise efficient consumption
Leakage	Volume of water lost on our pipe network between water treatment works and the customer's tap	1/17	· Use latest technology to detect leaks in highest leaking areas · Install smart meters to identify leaking supply pipes · Use data from hydrophone sensors on our network to detect leaks more quickly · Optimise the pressure in our network to calm flow · Exploit smart technologies to improve visibility of risks to our network · Use pressure monitoring data to identify transients in the network · Track emerging risks of asset failure using condition monitors · Renew mains which burst frequently
Water supply interruptions	Average time customers are off water during the year	11/17	
Mains repairs	Number of times we have to repair water mains because they have burst (irrespective of the disruption to customers)	15/17	
Customer Measure of Experience (CMeX)	What customers think of our overall service and our response to requests for help	10/17	· An improved online account offering for customers · Quicker and easier online bill payment options · Better matching of resources to customer-driven workloads · Getting better at keeping customers informed about the progress of their jobs
Drinking water quality (CRI)	Measure of our compliance with standards for drinking water quality	9/17	· Install water quality monitors and pressure loggers at our highest risk sites · Develop dashboards to bring together all data needed to identify risks to water quality · Proactive renewal of seals on highest risk storage points to prevent ingress of untreated water
Internal sewer flooding	Number of times customers' properties were flooded with wastewater	7/11	· Install monitors on 11,000km of highest risk sewers to identify blockages early · Work with food serving establishments to improve standards of grease management · Targeted programme to cleanse high risk sewers and pumping station wet wells · Use data from Ovarro monitors at pumping stations to get ahead of emerging issues
Pollution incidents	Number of times polluting material escaped/spilled from our pipes, treatment works or pumping stations	8/11	
Treatment works compliance	Number of our water treatment works and water recycling centres which failed to comply with their environmental permits	6/11	· Overhaul our process for collecting sludge from our water recycling centres · Improve our sludge thickening to optimise storage, removal and transport · Move job prioritisation responsibilities from central scheduling to give field maintenance technicians greater autonomy

*There are 17 companies providing drinking water services and 11 providing wastewater services

Summary of our performance and underlying causes

The challenges in the region we serve



Home to 15% of England's population
and four of the fast-growing cities Cambridge, Peterborough, Milton Keynes, and Northampton mean that by 2043, 700,000 more people will live here

Lowest rainfall
at 2.14mm per day, versus the national average of 2.85mm

28% of land is below sea level,
putting us at risk of flooding whilst hotter than average temperatures make us prone to drought

Businesses in the East are particularly water intensive,
e.g. food processing

14 diverse counties
in our region, all with differing environmental, social and economic needs

75% of land
in the East of England is used for agriculture, higher than any other region

We manage water 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. Our climatic and soil conditions pose particular challenges for the health of our assets. Much of the land is drained and rich in soils which are highly shrinkable, often chemically aggressive and structurally unstable. Peer academic research shows that extreme temperatures lead to shrinking and expanding soils of this kind, exacerbating ground movements that can increase failures of water distribution mains.

We have used industry-leading climate modelling tools to identify high-risk water main assets in our region that are vulnerable to these changing climate conditions. These are water mains of a smaller diameter, made of various rigid materials with socket type joints, and located in shrinkable soil types susceptible to climate induced ground movement. These high shrink-swell soil types (namely class 4, 5 and 6 with 6 being the highest) are prevalent in large parts of our operating area making this a particular acute problem for Anglian Water. This is exacerbated within the region we serve, due to major centres of population such as Peterborough and Milton Keynes being directly within class 6 soil areas as seen in figure 1. The majority of the remaining UK class 6 soils are in remote upland areas such as the Lake District.

Since 2012, we have worked with Dr Tim Farewell of MapleSky, a research organisation that helps water companies understand the impacts of climate change on their networks. Through this project, we are better able to understand which of our assets are most at risk and put in plans to protect them. We own, operate and maintain a vast array of physical assets from reservoirs, pipelines and tanks to pumps, treatment plants and control systems. The replacement value of these assets amounts to over £67 billion in today's prices. Ensuring we understand asset health and potential consequences of failure, is helping us to prioritise activity and target investment in the right places.

With 20% of our pipelines creating 80% of our burst mains, we're proposing a programme to renew the 8,241km of climate vulnerable water mains that need to run for decades. This is 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. Our research with MapleSky is now being applied to our pressurised sewerage assets. More can be found in our **Asset Systems Resilience Appraisal (ASRAP)**.

Improving asset resilience in the face of climate change is just one example. Our forward-looking approach to investment has seen us build resilience for the long-term over decades. For example, in 2014, our shareholders funded the new East Hills Water Treatment Works for Norwich to improve security of water supply to Norwich and the surrounding area. Similarly, shareholders funded a major resilience scheme in Peterborough, dualling key assets to provide more than one source of supply in the event of an interruption.

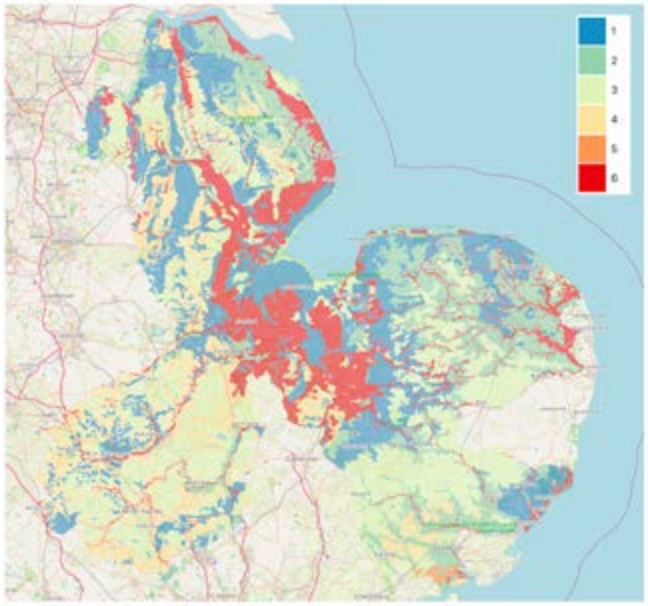


Figure 1 – Shrink-swell classification (SS_WC20) over the Anglian Water (water supply) area. Sources: Infrastructure data © Anglian Water. Soils data © Cranfield University and for the Controller of HMSO, 2019.

Another example is our interconnecting pipeline – the biggest infrastructure programme in Anglian Water's history. Our pipeline will be key to moving water around the region to improve resilience to drought and keeping fresh, clean water flowing to homes and businesses.

In addition to ensuring our region is able to handle pressures such as population and economic growth and climate change, we are taking action in areas of poor performance, such as pollutions and improving the performance of our water recycling assets. That activity is starting to show positive change, but we know it will take more time before we see this materialise in our performance. That's why, as well as continuing to invest in our customers' number one priority – safe, clean water, now and in the future – our Business Plan (2025-2030) places a large emphasis on protecting and enhancing the environment.

Extreme weather in 2022

Certain Performance Commitments such as water supply interruptions can be heavily influenced by volatile weather.

We had seven successive months where rainfall failed to match expected levels, and in August 2022, the Environment Agency declared a drought in our region. This had consequences for our operations. Despite this, we were one of the only water companies that met customer demand for water without needing implement a hosepipe ban. We also avoided resorting to drought permits and orders.

Figure 2 shows the variance between actual and expected rainfall between October 2021 (the start of the water resources refill season) and March 2023.

In 2022, the UK also experienced two extreme weather events – the July heatwave and severe freeze-thaw in December. Both were classified as Red warning events by the Met Office. On top of the drought these provided further additional challenge. In 2022, the Met Office recorded the hottest day on record (40.3 degrees) in Coningsby, Lincolnshire, while the drought created operational challenges in other parts of the UK.

However, extreme weather patterns will and are becoming the norm. For example, in October 2023, we experienced the impact of Storm Babet, with heavy rains flooding parts of Suffolk and Norfolk. Certain Performance Commitments such as water supply interruptions can be heavily influenced by volatile weather events. We proactively alert Ofwat when named storms hit, and have a full incident response strategy to mitigate the impact. The extent to which we are impacted is something we are addressing through projects such as our strategic interconnector pipeline, which will support a reduction in water supply interruptions by providing a back-up sources of supply, such as strategic water mains, for customers in our region.

Figure 2

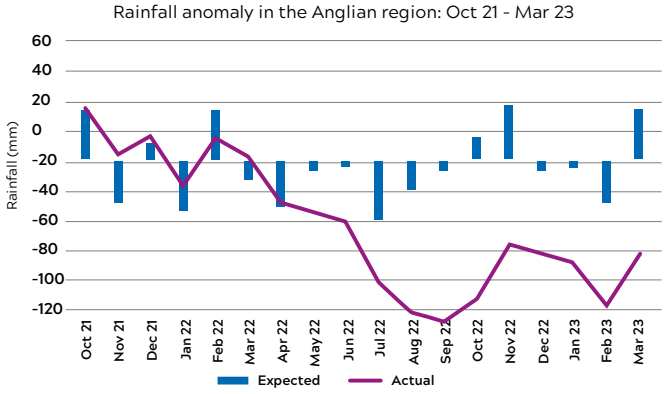
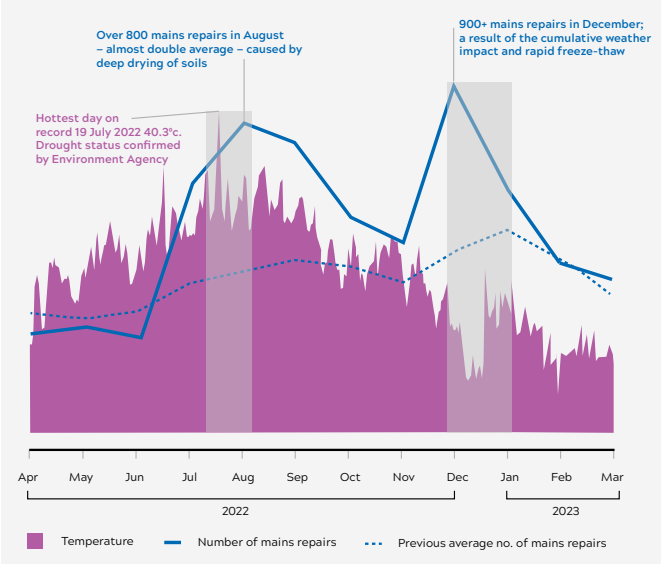


Figure 3



Greater visibility and increased reporting

Smart technology is providing us with more data than ever before on our performance. For example, by the end of 2023, we will have 100% Event Duration Monitor coverage on our storm overflows. This helps us to improve our performance (e.g. by helping us to identify leaks) but also reveals issues that we would not have seen previously.

Because in many areas we are now accessing a level of data that we were not privy to five years ago, it may look like our performance is declining but in fact our current reports may not be made on the same basis as previous years. It is unclear whether the rest of the industry is always reporting to a similar level of detail.

1 Per Capita Consumption

Per Capita Consumption (PCC) measures the average volume of water used by each of our household customers every day. It is reported as litres of water per person per day.

Reducing domestic water consumption is a key part of our strategy to encourage water efficiency. By minimising demand, we can protect the environment and be better placed to meet future water needs.

Ofwat's regulatory framework assesses our average PCC over a rolling three years, reducing the impact a single year of adverse weather may have.

Our Performance Commitment Level is measured against water usage in 2019/20.

Forecast performance

2023/24	2024/25
131.8 litres per person per day	**128.1** litres per person per day

Per Capita Consumption

Figure 4

Per capita consumption (litre/person/day) in 2022/23

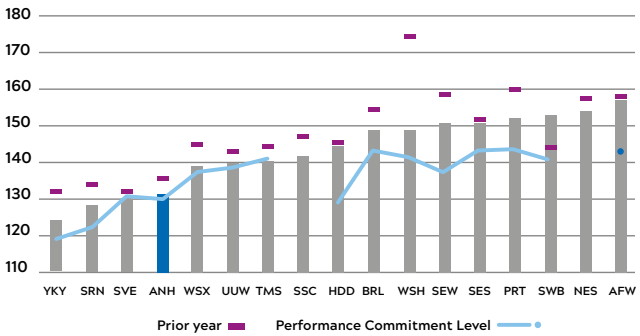
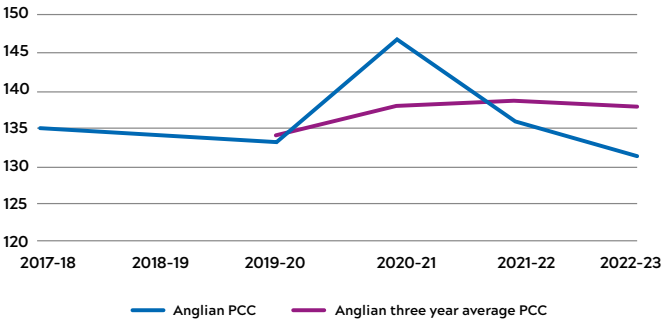


Figure 5

Anglian Water's per capita consumption (PCC)



Where are we today?

We have one of the lowest Per Capita Consumption (PCC) levels in the industry. By year end we are forecasting to achieve under 132 litres per head per day. Last year, we saw our lowest PCC performance to date, despite record-breaking hot weather throughout the summer.

This is part of a consistently improving downward trend. Our strong performance can be attributed to our consistent work to encourage water efficient behaviours. We were an early adopter of metering in the 1990s, which means that for thirty years our customers have had clear visibility of their water use and a financial incentive to use water wisely. More recently this has been strengthened by our smart meter programme providing data at customers' fingertips and more accurate, regular measurement. Our smart meters alone have helped pinpoint 93,000 customer-side leaks, saving customers water and money. So far we have installed 650,000 smart meters and this number is due to reach just over 1 million by 2025 and 2 million by 2030.

Our actions to encourage water-wise behaviours, coupled with the cool, rainy summer this year which reduced demand for garden watering, means we expect our PCC performance to improve again in 2023/24. Our three-year rolling average score should also improve as we lose the peak 2020/21 figures, impacted by higher water use during the Covid-19 pandemic.

Nearly every water company reported a lower PCC level, but not one company met their performance commitment level in 2022/23. Despite our upper quartile performance and best ever year, we do not forecast meeting Ofwat's PCL in 2023/24 or 2024/25 as the PCC Performance Commitment tightens every year. We do, however, expect to continue achieving positive reductions and to remain an upper quartile performer in the industry.

What is influencing our performance?

Key factors include:

- Heatwaves driving higher demand
- The cost-of-living crisis
- Global pandemic

We're half-way to meeting our rapid roll out of 1 million smart meters to 2025, and our high meter coverage provides a reliable degree of accuracy for this measure where we're already an upper quartile performer. Our smart meter data helps us better understand water consumption patterns and we continually measure the impact these factors have on overall domestic usage.

The chart shows our performance since 2017/18, when a new three-year rolling reporting methodology for the industry was introduced. PCC rose significantly in 2020/21 due to the Covid-19 pandemic and lockdowns imposed from March 2020. Although it has partially recovered during this time, it was not until year three of the rolling assessment period (2022/23) that it returned to below our base year figure. This 'peak' in PCC affected our overall average score for last year. Had the pandemic not occurred, our data analysis shows that our three-year average PCC performance for 2022/23 is 132.5 l/hd/d – much closer to our PCL.

The action we're taking

In 2020/21, we embarked on a ten-year smart meter programme and engagement strategy. So far, we have redeveloped our online customer portal, which enables customers to easily access and view consumption levels, will encourage closer monitoring of usage and encourage customers to drive down their consumption.

Smart meter data helps us link the peaks in PCC with specific triggers, such as the weather and, where possible, it provides a prompt for us to discuss with customers the background to the water cycle and how to become more water efficient.

We reach 300,000 customers a month via our customer engagement programme. Our monthly comparison email frequently updates customers on the water they are using. This email sends customers to interact with their data via our MyAccount online platform.

We're also developing guidelines to help us monitor the impact of behaviour change interventions, better understand usage patterns across our region and the different customers we serve, and effectively communicate using widespread and more targeted approaches. We're confident this will unlock the true potential of smart meters.

A top priority within our smart meter roll-out programme is to help customers find and fix leaks faster in their properties.

By 2030, our smart meter programmes alone will save a total of 18.1 megalitres per day.

This combines our smart meter benefits of 5.3 megalitres per day from behavioural change, 8.8 plumbing loss reductions and 4.0 reductions in customer supply pipe losses.

We're also trialling innovative techniques, such as seasonal tariffs and flow regulators which we fit onto customer meters to regulate the flow of water into their property.

Our long-term strategy, to enable customers to easily access and view their water consumption data, is delivering benefits; usage is down 3.7%, on average, and as we receive more smart meter data, we'll be able to increase the effectiveness of our water efficiency interventions and propel savings.

Root cause	Action	SMART target	Estimated Performance Commitment benefit
Customer side leakage – plumbing loss	Developing our support offering for customers with very long running small leaks. Trialling options to fix leaks for customers to reduce run time and save water.	Trial 200 customers with long running leaks to offer opportunity by October 2024	**High**
	Enhancing our customer journey for households identified to have small leaks, to empower customers to fix them more quickly.	Add 1 additional customer interaction to over 10,000 of our customers in the customer side leakage journey to test the response improvement and subsequent water saving on P4 leaks by December 2024	**High**
	Large scale marketing campaign to raise awareness about water wasted in the home due to leaks. Giving customers information about how to find them and fix them quickly.	Reach 1,000,000 customers by September 2024	**Medium**
Low perception of own usage	New online MyAccount platform launched that will make it easier for customers to access and view their usage data.	Deployment of new MyAccount service to a minimum of 80% of users with aim for 6 million MyAccount log-ins per annum by March 2024	**Medium**
	Development of our monthly comparison reports to show customers how much water they are using and nudging them to check their usage data with prompts for helping them use less.	Research delivered per quarter and actioned within a minimum six-week period Aim for 3% reduction in consumption across the year	**Medium**
Understanding water usage in the home	New data analysis of customer usage to better understand customer behaviour and how water is used within the home.	Monthly data reports introduced to segment customer behaviour patterns to inform tailored engagement strategy June 2024	**High**
	Using customer smart meter data to measure the impact of water efficiency support and adapt activity based on how effective it is.	Follow up a minimum of 5,000 in-home visits and partnerships to measure effectiveness and refine by June 2024	**High**
	Developing a robust insight programme to feed learnings from research directly into our behaviour change activity to build on our scientific and data-led approach.	Quarterly customer insight slot with online community to provide actionable report and customers learnings implemented within a minimum six-week period	**Medium**
Motivating customer action	Launching a seasonal tariff trial to support customers to use less water during summer months. Testing both messaging and frequency of contact to establish a sustainable approach to driving customer behaviour.	Launch trial with over 8,000 customers by April 2024	**Medium**

2 Leakage

Leakage measures the volume of water lost between our water treatment works and customers' taps, and includes water lost from the supply pipe they own. To reduce the impact of a single exceptional year, Ofwat assesses our average leakage on a rolling three-year basis.

Our target is set as a percentage reduction from 2019/20. We report leakage in megalitres lost per day and also as a figure, per km of water main and/or property.

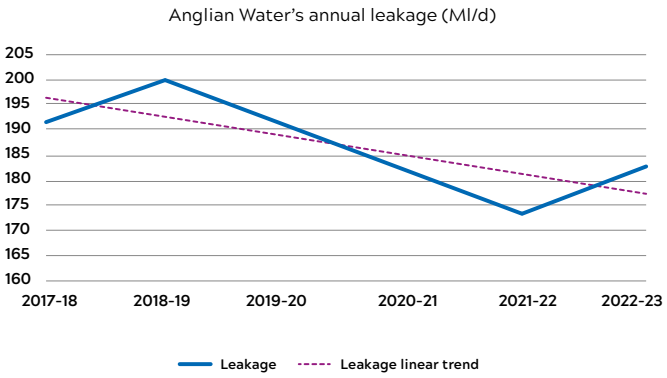
Forecast performance

2023/24	2024/25
174.5 megalitres per day	**172.3 megalitres per day**

Leakage

Figure 6

Figure 7



Where are we today?

Leakage is a priority for customers and the region. Operating in the driest region in the UK, we have always had a laser focus on reducing leakage to conserve water. It's one of things our customers care about most, which is why we've made longstanding investment and innovation in this space over decades. That has enabled us to reduce leakage by 38% since privatisation and hold an industry-leading position since 2010.

Our Performance Commitment Level (PCL) is the most challenging in the industry. Despite missing our last Ofwat target, we still outperformed all the companies that met their targets, reporting the lowest level of leakage in the industry.

Having held a leading position for more than 13 years, incremental gains are much harder to achieve. We are looking to learn from international equivalents to improve our performance further.

Figure 7 shows our performance against this measure since 2017/18, when a new reporting methodology was introduced. The increase in 2022/23 is a culmination of extreme weather and the impact from mains bursts. However, it was the first time we'd missed our reduction target since 2010/11 and was still 7.5% below our 2019/20 baseline. Our three-year average leakage was better than the previous year.

In the current year to date, night flow leakage is at an all-time low, putting us on track to achieve the reduced average of 164 megalitres lost per day by year end. If accomplished, this would represent a 10% improvement on our performance in 2022/23.

We expect 2023/24 performance to be much better, but we do not expect to meet the 2023/24 or 2024/25 PCL because our three-year average figure will continue to be affected by our 2022/23 performance, which includes the extreme weather events. Should we encounter harsh weather again in these years, by the end of 2025 our three-year average figure could increase by 3%.

The action we're taking

Smart metering is a valuable tool to manage leakage – both supply and customer-side. Our smart metering strategy includes:

- Rolling out a further **1.2 million smart meters by 2030**, in addition to the 1.1 million currently scheduled
- A **fixed data network** for areas with smart meters
- Collecting and using additional smart meter data to **identify customer side leakage.**

By 2030, we estimate smart meters, enabling behavioural change and improvements in leakage performance will **save an additional 18.1 megalitres per day**.

We also plan to install boundary boxes and smart meters on properties with shared supply pipes, for example, Victorian terraced houses. This will allow us to use data to identify and reduce leak run times on these shared services and work with customers to repair the leaks.

Root cause	Action	SMART target	Estimated Performance Commitment benefit
Leakage from customers' supply pipes	Continued roll out of smart meters across our region to enable detection of leaks on customers' supply pipes.	1,096,397 smart meters installed by end 2025 A further 60,000 meters funded through the Accelerated Infrastructure Delivery Plan brought forward from 2025	**Medium**
	Additional teams to work in areas not currently smart metered to identify customer side leakage and work with the customers to ensure timely resolution.	8 additional people by end of 2025	**Low**
Inability to fully control pressure fluctuation	Enhanced Pressure Monitoring (EPM) – by installing multiple pressure monitors on our pipes we have better visibility of damaging transient activity – necessary to achieve calm, controlled networks.	80% of District Metered Areas with Enhanced Pressure Monitoring coverage by the end of 2024	**Enabler**
	Pressure optimisation – by installing assets such as pressure reducing valves or pump controls we can optimise pressure in our pipes to achieve a calm proactively managed network.	24 new, and optimisation of 20 existing, pressure managed areas by end of 2024	**Medium**
	Transient identification and reduction – we use the data from our pressure monitors and our pressure-controlling assets to detect and eliminate damaging transients.	Complete exploration phase by end of 2025	**Enabler**
DMAs that are persistently above target	Highly skilled leakage teams equipped with latest technology target leakage in DMAs that have been persistently above target.	26 people dedicated to the intensive leakage process	**Medium**
Reducing leakage run times	Use satellite imagery in rural areas to identify leaks.	5,000km mains surveyed per year	**Low**
	27% of our network is covered by fixed hydrophone sensors. We will use these to identify leaks as they breakout, reducing leak run times.	Team of 40 people dedicated to fixed sensor programme	**Medium**
	Introduce software to help us differentiate between water used by customers and leakage.	Software rolled out across network	**Enabler**
Leak repair work planning	Introduce working practices to achieve same day repair and reinstatement of non-urgent repairs and minor leaks from stop taps.	Improved productivity of repair process and freeing up of repair team time to focus on more significant leaks – target 4 jobs per day	**Enabler**

3 Water supply interruptions

Most customers experience uninterrupted water availability. A few customers experience supply loss for a short time, if for example a water main has burst.

When this happens, we record how many customers are affected and for how long. To identify the average length of interruption per customer, we divide the number of lost minutes per year, by the number of customers we supply.

Forecast performance

2023/24	2024/25
11:04 minutes	**09:48 minutes**

Water supply interruptions

Figure 8

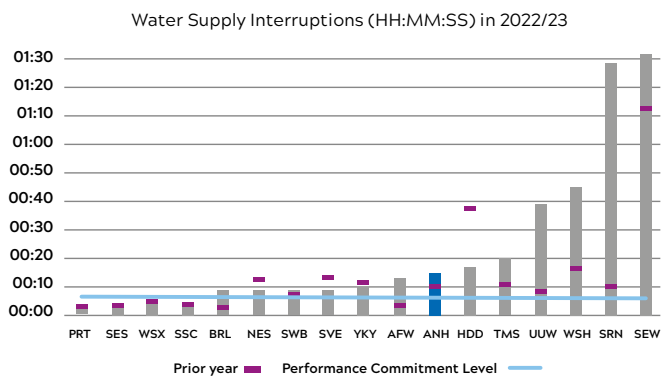
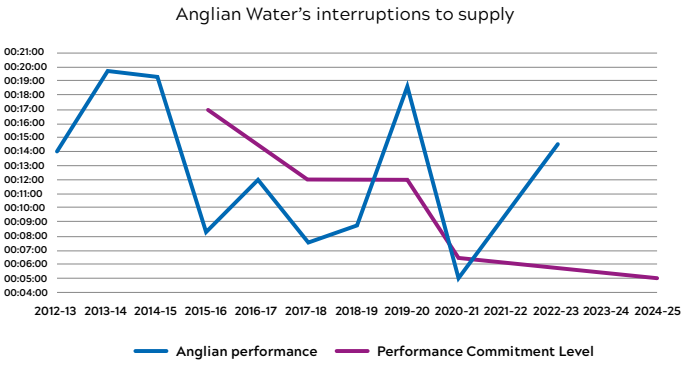


Figure 9



Where are we today?

Figure 8 and 9 show our performance against this measure since it was introduced in 2012/13. While our performance has generally improved and in most years we've met the PCL, the data clearly shows the volatility of this measure. For example, in 2019/20 a single major incident in Leighton Linslade was responsible for two-thirds of the score for the year. Without this incident, our score would have been well within the PCL. Last year, a burst in King's Lynn attributed nearly 10% of the total score for the year.

Recognising our 2022/23 performance was below expectation, substantial effort has been driven into a programme of work to increase performance and improve our supply interruptions. A project team with dedicated resource is now fully focused on this activity. Through this approach, we have stabilised our supply interruptions and at the end of the first half of 2023/24 our score was 2 minutes 50 seconds. This was on track to meet our PCL for 2023/24 and shows a significant improvement from our 2022/23 first half year performance of over 8 minutes.

However, our recent performance has been adversely impacted by two events related to Storm Babet in October. These events alone have added 3 minutes 21 seconds to our score. As was illustrated in 2022/23 and now with Storm Babet, we are very mindful of the risks to our performance from adverse weather. We do not now expect to meet the PCL set by Ofwat for 2023/24 or 2024/25. We did not propose in our business plan to meet the PCL set by Ofwat for these years.

What is influencing our performance?

Nearly a quarter of our customers are still supplied from a single supply system. In 2019 we set ourselves a target of reducing this to 14%. In meeting this target, we will improve our ability to switch customers to an alternative supply when one source is interrupted.

The climate challenges that more acutely impact our region than the rest of the UK, as set out on page 6, explain the reasons our performance was impacted in 2022/23.

For context, most companies failed to meet their PCLs in 2022/23. All were affected to some extent by the same weather conditions. Our Business Plan (2025-2030) outlines significant spend on infrastructure to support resilience to climate-related events.

The action we're taking

Investment in pressure management

A drop in pressure is a key indicator of a leak or water supply interruption. We have installed high frequency pressure monitors in over 50% of our district metered areas and will have covered 80% by end-March 2024. As part of the programme, we're also upgrading older ones.

Investment in pressure management is crucial for safe, smart water systems across our region. We are rolling out more advanced systems with smart controllers to help us achieve more stable pressures. Our current programme will see pressure loggers installed to an average of five loggers per District Metered Area (DMA) in over 80% of our DMAs. So far, we've installed 144 new pressure management systems and upgraded 201 to advanced systems.

As part of our post investment benefits review, we analysed bursts in pressure managed areas to see if there was a reduction in burst frequency. Our analysis confirmed that pressure management has been effective in helping reduce the number of mains bursts, in particular with PVC and iron mains.

We will reach our planned target of 80% coverage by the end of March 2024. As part of the programme we will be upgrading our historical loggers.

Enhancing operational resilience

In addition, the weather events experienced in 2022 saw us invest in operational resilience. In summer, we increased the number of leakage repair teams by a third, taking us to more than 100 repair crews, and diverted other teams to critical bursts, which enabled us to minimise water lost as quickly as possible. Retaining the additional teams also helped us weather the subsequent freeze-thaw in December.

Long-term investment in resilience

Furthermore, our strategic interconnector programme is underway and will be extended to cover even more of the region as part of our 2025-2030 proposals too. The interconnected pipe network across our rural region will provide customers with a back-up supply source as well as providing environmental protection from abstraction in sensitive areas. It means we will have greater options to reroute supplies when a strategic main bursts. We have been investing over many years to create this resilient network, which our interconnector programme builds upon.

Root cause	Action	SMART target	Estimated performance commitment benefit
Incomplete visibility of emerging risk	Improve situational awareness – Using statistical models, data from new smart technologies and dashboards, we get a better understanding of our water networks and early warning of potential weaknesses that could lead to supply interruptions.	50% delivered by end of 2025	**Medium**
Inability to fully control pressure fluctuation	Enhanced Pressure Monitoring (EPM) – By installing multiple pressure monitors on our pipes we have better visibility of damaging transient activity, which is necessary to achieve calm, controlled networks.	80% of DMAs with EPM coverage by end of 2024	**Enabler**
	Pressure optimisation – By installing assets such as pressure reducing valves or pump controls we can optimise pressure in our pipes to achieve a calm proactively managed network.	24 new pressure managed areas and 20 existing areas optimised by end of 2024	**High**
	Transient identification and reduction – We use the data from our pressure monitors and our pressure-controlling assets to detect and eliminate damaging transients.	Complete exploration phase by end of 2025	**Enabler**
	Condition based monitoring – By installing monitors that can assess the condition of our assets, we can gain early warnings of any asset that is liable to fail and cause a supply interruption.	Target 90 monitor installs per year since 2020 Target 360 by end of 2024 (current 301) Target 450 by end of 2025	**Medium**

4 Mains repairs

This measure counts the number of times we undertake physical repair work to mains which are losing water; it's expressed as the number, per 1,000km of mains. Its purpose is to monitor the health of our water mains.

Within this figure, we include repair work on our own water mains (excluding communication or supply pipes), unless the damage was caused by a third-party and the costs are potentially recoverable, such as a builder digging through our main. The cause of a mains burst could be due to failures or movement in any pipe, joint or joint material.

Forecast performance

2023/24	2024/25
134.2 per 1000km	**142.3 per 1000km**

Mains repairs

Figure 10

Mains repairs (per 1,000km main) in 2022/23

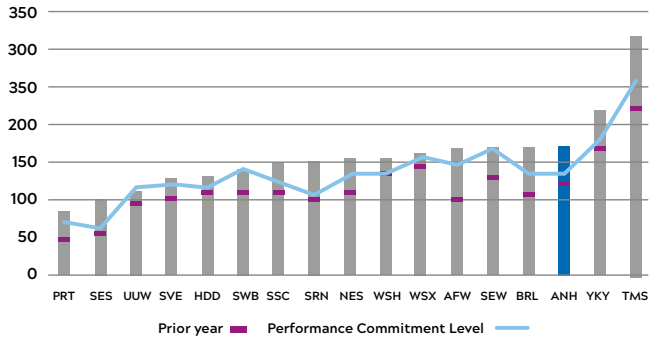
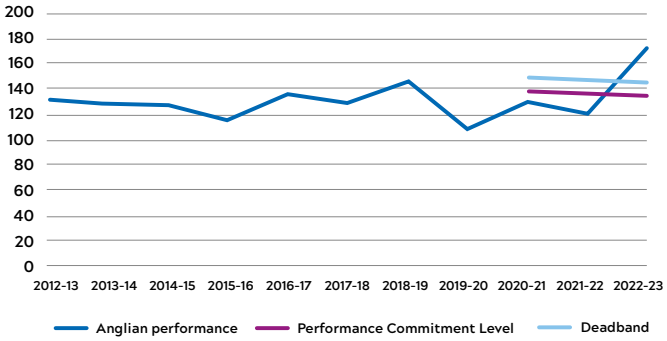


Figure 11

Anglian Water's mains repair (per 1,000km main)



Where are we today?

Our leading efforts to drive down leakage have led us to use a raft of innovative technologies like submarine-inspired hydrophones, which allows us to spot the tiny leaks now left on our network. This proactivity in using smart technology inevitably means the more information we have, the higher the number of mains repairs we spot, which then disadvantages us in the mains repairs Performance Commitment.

Fundamentally it is right to be proactive and use smart technologies to have better visibility of our baseline performance but it does mean our performance on mains repairs appears worse than others. It is unclear whether others in the industry have this level of insight and are able to report to the same level of accuracy.

Figure 11 shows our performance against this measure since 2012/13. We've been stable over most of this period, with small variations primarily due to weather conditions. The number of mains repairs in 2022/23 were significantly higher than previous years. The chart shows we met our PCL in the two years after they were introduced but failed to meet it, or the minimum threshold, in 2022/23.

Year to date, we have recorded 56.5 mains repairs per 1,000 km of water mains. We forecast being within our PCL for 2023/24.

What is influencing our performance?

While extreme weather and climate change are factors, we've identified the material of our mains, in conjunction with the soil types we have, as an additional challenge and major root cause to not meeting our target (see page 6). In addition to our plans to renew climate vulnerable mains, control over pressure fluctuation and our work with enhanced pressure monitors will also help prevent bursts.

The action we're taking

After making changes to our operational practices, reallocating resources and adopting smart approaches to network and asset management, such as using hydrophones to spot leaks, we're confident we can stabilise and improve our performance in the near future. Smart monitoring leads to greater awareness in helping to spot leaks and manage them proactively. However, the more information we have, the higher the number of faults we spot. Whilst this is testament to the high quality of data we are receiving, it does not always reflect positively in a PCL context as we are identifying more faults. Looking ahead, we plan to invest more to tackle specific threats like flooding and single points of failure, and on pipe replacement and renewal.

Root cause	Action	SMART target	Estimated Performance Commitment benefit
Mains deterioration	Frequent burst mains programme – Annual and ongoing programme of renewing water mains with the greatest risk of failing.	Approx 10km of the highest burst rate mains renewed using the most efficient renewal techniques in 2024	**Medium**
Inability to fully control pressure fluctuation	Enhanced Pressure Monitoring (EPM) – By installing multiple pressure monitors on our pipes we have better visibility of damaging transient activity – necessary to achieve calm, controlled networks.	80% of DMAs with EPM coverage by end of 2024	**Enabler**
	Pressure optimisation – By installing assets such as pressure-reducing valves or pump controls we can optimise pressure in our pipes to achieve a calm proactively managed network.	24 new pressure managed areas and 20 existing areas optimised by end of 2024	**High**
	Transient identification and reduction – We use the data from our pressure monitors and our pressure-controlling assets to detect and eliminate damaging transients.	Complete exploration phase by end of 2025	**Enabler**

5 CMeX

CMeX (Customer Measure of Experience) is a customer survey conducted for Ofwat which assesses the experience the company provides to domestic customers.

CMeX is based on two performance measures with the following weightings:

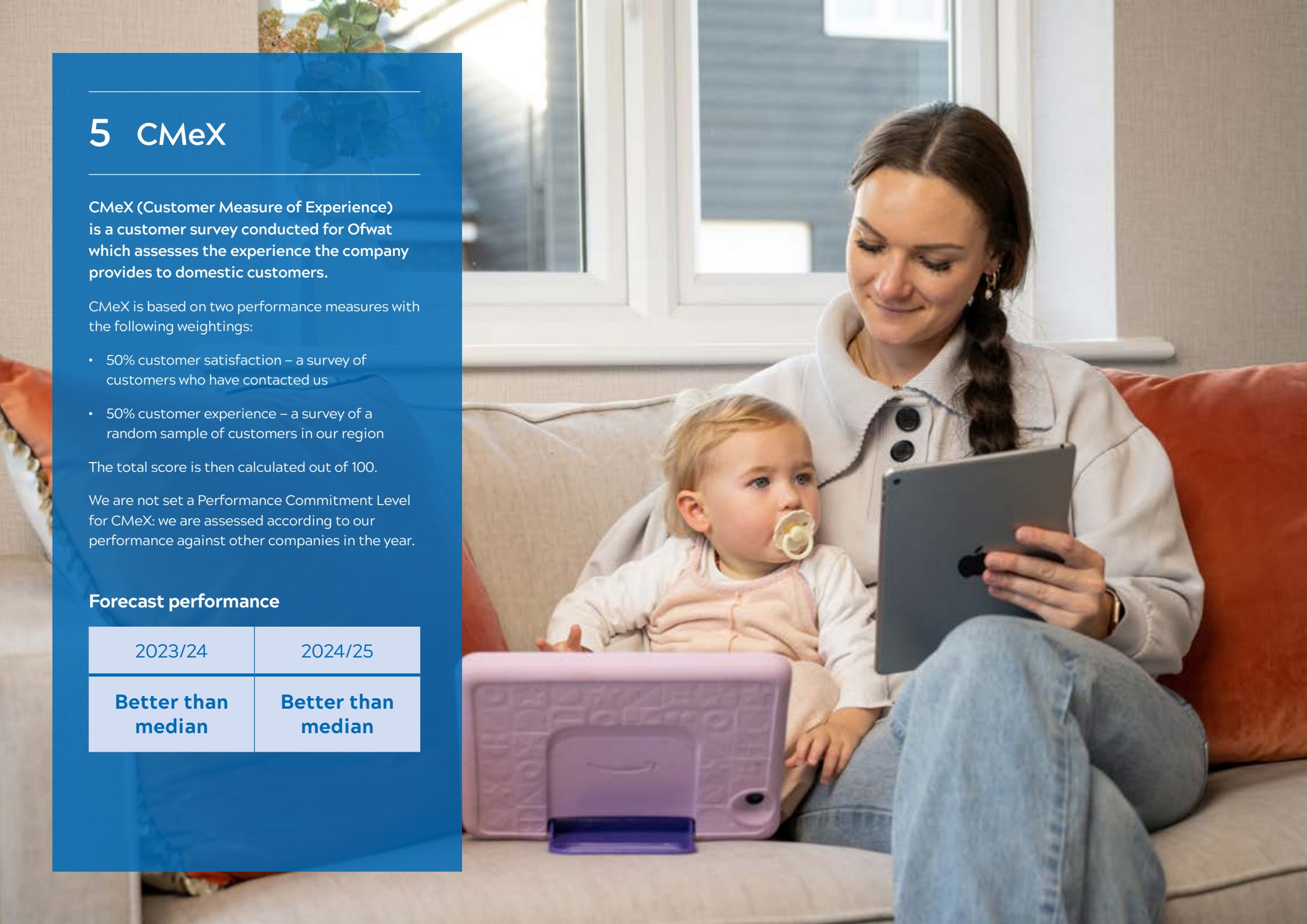
- 50% customer satisfaction – a survey of customers who have contacted us
- 50% customer experience – a survey of a random sample of customers in our region

The total score is then calculated out of 100.

We are not set a Performance Commitment Level for CMeX: we are assessed according to our performance against other companies in the year.

Forecast performance

2023/24	2024/25
Better than median	**Better than median**



CMeX

Figure 12

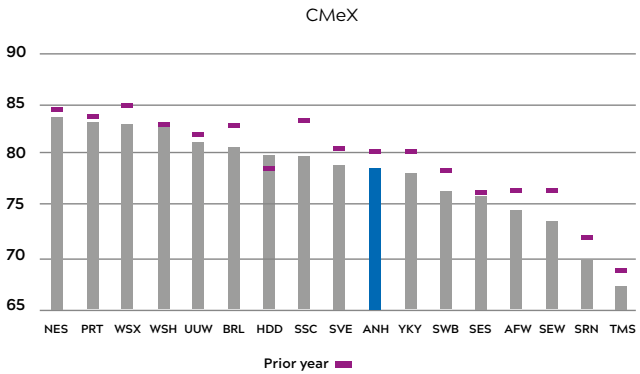
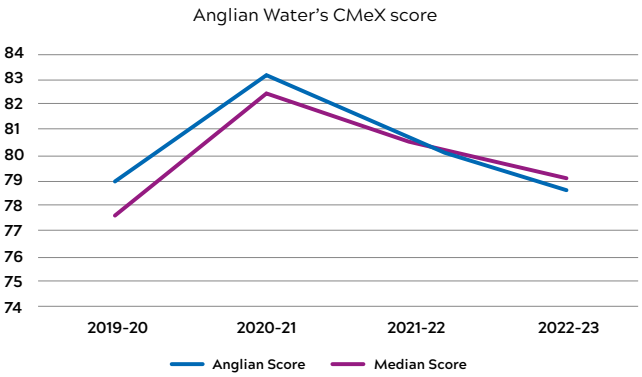


Figure 13



Where are we today?

The CMeX league table is tightly bunched and a few points stand between being in first or sixth position. Our most recent score this year placed us fourth among the 10 largest Water and Sewerage companies (WaSCs). All but one companies' scores went down last year.

Until 2022/23, we have always ranked at or above the median company on CMeX and its predecessor measure, the Service Incentive Mechanism. Our position is improving and we hope to at least maintain our overall sixth ranking this year, but we are mindful this is a very competitive measure and know we'll need to stay on top of our game.

What is influencing our performance?

- Unplanned events, such as extreme weather, impact the speed in which we deliver service to customers for some issues, such as responding to flooding incidents when we have widespread, heavy rainfall. This can result in a failure to meet customer needs and expectations. We're enhancing our workload and resource planning process to improve our speed of response during events.
- A lack of clarity in our communication with customers. For example, not explaining why we're taking a particular action, means service queries and requests are not always resolved in a way customers would like them to be. We're reviewing our end-to-end communications to ensure customers are kept informed.
- Not everyone has positive perceptions of drinking water, particularly when it comes to its taste and hardness. Our region's water is hard as a result of the chalk and limestone sources it comes from.

We also know the CMeX measure and weightings used for scoring disadvantage companies with a higher number of digital customer interactions. We are a leading company in this respect, with some water companies only having around 12% of their contacts via digital channels. We know customers prefer to use them to engage with us – 77% of all our customer interactions are digital, and growing. Our Board fully supports this focus on doing what is right for customers despite the direct consequences for our CMeX assessment and the resulting penalty incurred. We have asked Ofwat to ensure a level playing field and are working hard to counterbalance where we can.

The action we're taking

Root cause	Action	SMART target	Estimated Performance Commitment benefit
Customer dissatisfaction with our digital interactions	New online account management and app to enhance the speed, accessibility and ease of use of our online services.	New app rolled out to 100% of customers by end of March 2024	**High**
	New payment capabilities (e.g. Apple Pay) – to support quicker and easier online payments.	Completed	**High**
	New platform to manage our digital channels – enhancing accessibility and capabilities.	Phase 1: Transition phase to move to a cloud based telephony system by July 2024 Phase 2: Transformation phase to amalgamate digital channels allowing multi channel experiences for customers by March 2025	**Medium**
	Optimising the digital and self-service customer journey and experience – removing customer pain points.	Continuous improvement	**Medium**
Slow service delivery	Enhanced workload and resource planning process and technology – to better resource workload variances and enabling consistency in service delivery timescales.	Technology, Process and governance improvements delivered to support Water Recycling Networks by June 2024 Water Networks by September 2024	**High**
	New measurement and targets of internal service actions – driving visibility of performance and intervention in service delivery.	Live reporting delivered and visible within business streams and CMEX governance structures – December 2023	**Medium**
	Removal of waste and inefficiency in service processes – enabling greater right-first-time delivery.	Continuous improvement	**Medium**
Unsatisfactory resolution	End-to-end communications review of customer journeys – ensuring customers are kept informed and fully understand what's happening at key touch points.	Continuous improvement	**High**
	Customer centricity and behaviours programme – ensuring our culture and our individual behaviours support the customers' needs and expectations.	Ongoing	**Medium**
	Implementation of new field mobility solution – providing greater visibility of the customer journey across the organisation and an enabler for further enhancements to customer journey communications.	Solution live into all in scope functional areas by the end of March 2024	**Medium**

6 Drinking water quality (CRI)

The Compliance Risk Index (CRI) scores water companies on their ability to provide treated drinking water to required quality standards.

Run by the Drinking Water Inspectorate, the CRI calculates compliance failure at water supply zones, supply points, treatment works and service reservoirs, every calendar year, taking into account: the quality parameter that failed, the culpability of the company for the failure and its response, and the number of customers affected.

A score is given for every failure or incident and is totalled to create an overall annual score. The Performance Commitment Level is 0 – indicating companies should aim for 100% compliance at all times. If our score exceeds 1.5 (a threshold known as the deadband), we make a penalty payment to customers. Most companies are given an upper limit or deadband of 2.

Forecast performance

2023/24	2024/25
CRI score 4.00	**CRI score 2.92**

Drinking water quality (CRI)

Figure 14

Water quality compliance (Compliance Risk Index) in 2022/23

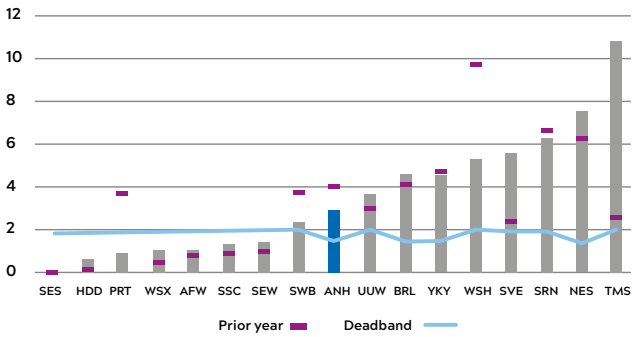
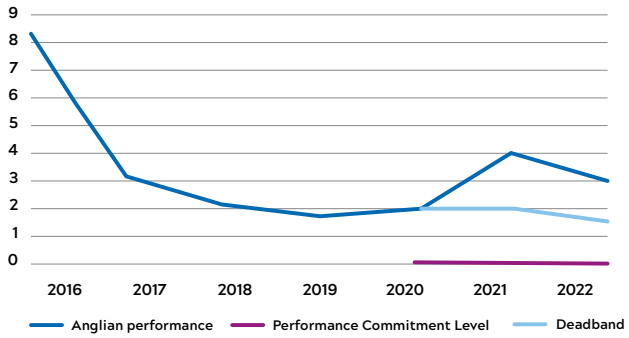


Figure 15

Anglian Water's water quality compliance (Compliance Risk Index)



Where are we today?

CRI performance across the industry varies dramatically, as figure 14 demonstrates. We also have one of the toughest targets, falling into penalty sooner than most other companies. We are held in high regard by the DWI for our approach to drinking water quality and, unlike other companies, have not been required to undergo a drinking water quality transformation programme.

Last year, our Compliance Risk Index score was 2.92. Whilst we missed our PCL and want to improve on this position, that score reflected a 29% improvement on the prior year and was ahead of the provisional industry average of 5.1. Our performance for 2023 has declined slightly, forecasting 4.0 for year end and will not meet our penalty threshold of 1.5. We are one of only four companies with this more stringent threshold. We still expect to be ahead of the industry average.

Providing safe, clean drinking water is the number one priority for our customers and our foremost responsibility. We aim to minimise risk to a pragmatic level in line with the Drinking Water Inspectorate's expectations. The Drinking Water Inspectorate recognises there is a residual risk associated with drinking water quality even when companies are providing excellent quality drinking water. Therefore it is unrealistic not to accept this residual risk exists at company assets and customer properties. Figure 15 shows our performance since 2016, when CRI was introduced, has improved significantly.

What is influencing our performance?

The reason for the decline in performance is due to failures at our Water Treatment Works and storage points. Approximately 56.6% of our CRI score was attributable to bacteriological compliance failures at our assets. We have an action plan to address the root cause.

The action we're taking

To improve our performance in this area, in 2021 we started to develop our Storage Point Improvement Programme (SPIP). The programme aims to improve our risk visualisation at our treatment works and our storage point assets, so we can investigate and mitigate risk in a timely manner. Based on our performance this year, we are currently identifying additional focus areas to reduce the risk further. Some of these focus areas are only applicable to our highest risk CRI sites.

Water Quality monitoring strategy

We're installing enhanced water quality monitoring using a combination of online bacteriological monitors at our highest risk CRI water treatment works, in-situ water quality monitors, and pressure loggers at our highest risk CRI storage points. This is supported by the development of a reporting platform and appropriate action triggers. As an additional step, we are proactively running full flow cytometry on every one of our water samples via our laboratory. This is enabling us to develop a more accurate picture of risk at our storage sites.

Data driven decision making: Risk visualisation
We've developed a Water Treatment Works Final Water and Storage Point Water Quality Risk dashboard combining static and dynamic data sets in one place. This aims to understand water quality risk at an asset level and allow proactive investigations to help reduce the likelihood of potential future microbiological failures. Further work will link upstream and downstream assets together to highlight any deviations or changes between those assets.

Asset inspections and data capture and visualisation strategy
An external and internal inspection app is in development to capture data. An external inspection reporting dashboard is also complete. The internal app will be complete by the end of January 2024, along with the internal inspection reporting dashboard.

We have trialled the use of a specialist scanner, which allows us to create 3D scans of tanks, and introduced a requirement to capture accurate 3D models of our storage point assets aligned to the internal inspection programme. This will allow for accurate structural issues to be documented and deterioration of an asset can be tracked between inspections.

Future remedial work and investment requirements can be more accurately predicted as measurements can be taken from the scan.

These developments provide greater visualisation of the asset health of our storage point assets and, along with the enhanced in-situ water quality monitoring, provide greater visibility of a change in risk position which will inform proactive investigations and or interventions to help mitigate a risk of failure.

This information is enabling us to take a number of assets out of service.

Proactive maintenance (hatch integrity)
A number of hatches have not been lifted and re-bedded within the last five years on our highest risk CRI sites. All of these are to have an additional external mastic seal applied between the exterior of the outer hatch and the upstand. This is a proactive approach to reduce any potential risk of ingress. This work was completed earlier this year.

Root cause	Action	SMART target	Estimated Performance Commitment benefit
Incomplete visibility of emerging risks	Water quality monitoring strategy – Installation of in-situ ATi and pressure loggers at our highest risk CRI storage point sites and online bacteriological monitors on our highest risk CRI Water Treatment Works final water points.	Installation programme complete at our 25 highest risk CRI sites by the end of May 2024 Reporting platform developed by June 2024	**High**
	Data driven decision making – Introduce dashboards which allow us to see in one place all the essential data for Water Treatment Works and storage points.	Phases 1 and 2 are complete. Phase 3 to be delivered following completion of scoping. Anticipated complete end of December 2024	**High**
	Asset inspections and data capture and visualisation strategy development of an internal inspection app and reporting platform.	Completion date end of January 2024	**Medium**
Risk of ingress of untreated water into our storage points	Proactive maintenance on our highest risk CRI assets to ensure they are completely water-tight.	Complete	**High**

7 Internal sewer flooding

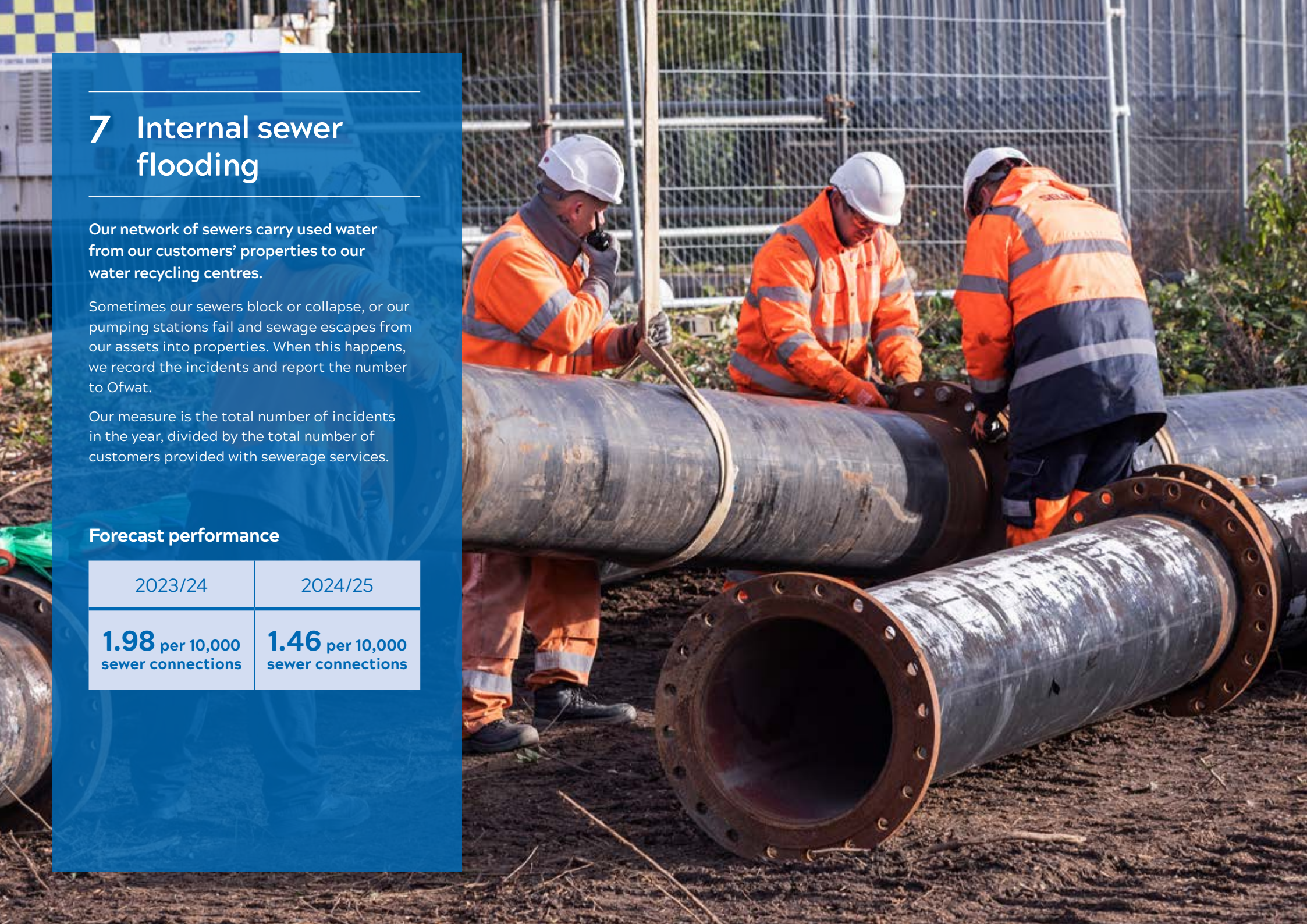
Our network of sewers carry used water from our customers' properties to our water recycling centres.

Sometimes our sewers block or collapse, or our pumping stations fail and sewage escapes from our assets into properties. When this happens, we record the incidents and report the number to Ofwat.

Our measure is the total number of incidents in the year, divided by the total number of customers provided with sewerage services.

Forecast performance

2023/24	2024/25
1.98 per 10,000 sewer connections	**1.46** per 10,000 sewer connections



Internal sewer flooding

Figure 16

Internal sewer flooding (per 10,000 sewer connections) in 2022/23

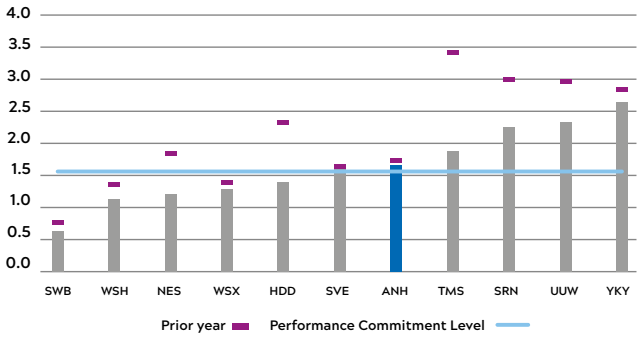
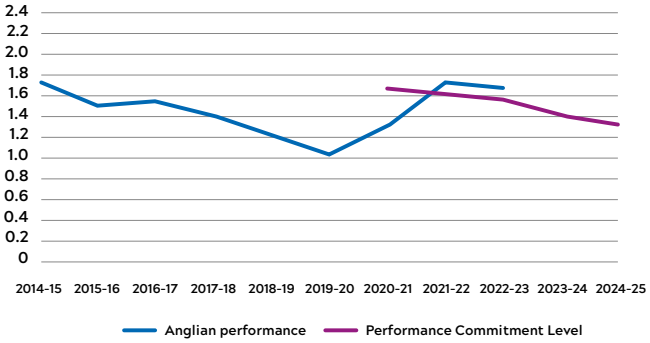


Figure 17

Anglian Water's Internal sewer flooding (per 10,000 sewer connections)



Where are we today?

Our sewer flooding, treatment works compliance, and pollutions performance are closely related. Any non-compliance or escape of sewage from our assets is an absolute priority and our biggest area of focus for performance improvement. The root causes of flooding and pollutions are similar – primarily caused by blockages – and the solutions we are bringing in for flooding and pollutions overlap as a result. Blockages account for almost 40% of pollution incidents on our sewer networks. Installing monitors will help us detect a blockage forming so that we can clear it before it causes an impact. We clear over 40,000 blockages every single year, caused by wrongly flushed items, as well as a build-up of fats, oils and greases. This equates to one blockage every five minutes – of which 80% are avoidable. Our rapid roll-out of 11,000 sewer monitors so far this year will help us monitor and mitigate against flooding as well as pollutions.

Figure 17 shows our performance since 2014/15. We generally improved until 2019/20, and since then, we've met or been close to meeting the PCL. In 2022/23 more than half of all water and sewerage companies missed the PCL.

In the first half of this year (2023/24), our score for internal flooding was 0.90 incidents per 10,000 sewer connections. Our forecast for the year end is 1.98 incidents per 10,000 sewer connections. While this is still above target, we are already seeing the benefits of our action plan, outlined on page 30; for example, we've seen the lowest number of blockages on our foul network since 2018. Lead indicators like these show the green shoots of progress. It will take longer for these to convert to positive outcomes in our performance, but they indicate that we are on the right track.

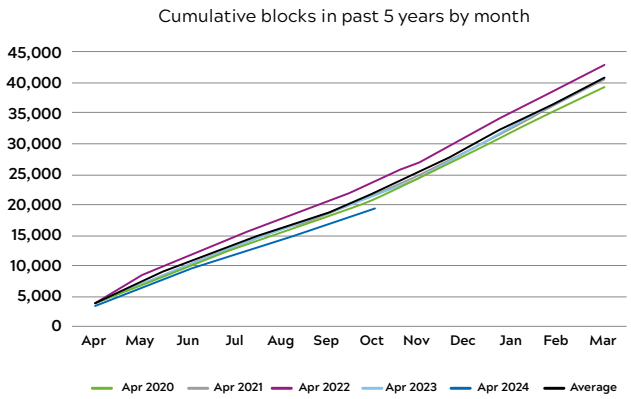
What is influencing our performance?

Blockages are the primary cause of sewer flooding, and 80% of those are completely avoidable. Many are caused by unflushable materials like wet wipes and sanitary items, plus a build-up of cooking fat, oils and grease. In the sewer network, these items form obstructions, known as fatbergs, which can block or restrict the normal flow of the sewer. For this reason, cleansing the sewers coupled with educating customers on what not to flush or rinse down the sink is critical to preventing blockages.

Flooding may also be caused by problems at pumping stations, such as a technical fault, or when severe storms and surface water overwhelms the capacity of the sewers. We are bringing in specific technology to help us predict technical issues and overloading on the sewers. The self-cleansing nature of sewer pipes means certain levels of flow through the pipe are needed to keep sewers clear. For this reason, a dry year, such as last year's drought, can also lead to more blockages and flooding. The drought, coupled with the scale and specific features of our sewer network, created the perfect conditions for blockages to accumulate in many locations last year.

Furthermore, we have many small diameter sewers stretching between the rural hubs across our vast region. These unique challenges require us to take a different approach to reduce flooding and pollutions.

Figure 18



The action we're taking

The expansive, rural nature of our sewer network requires us to have greater visibility, which is why monitoring is so crucial. The actions we're taking – installing smart sewer monitors and machine-learning technologies – will provide better visibility of how our sewers and pumping stations are operating, to pre-empt and prevent issues. Many initiatives are underway to more accurately target the right locations and intervene before an issue occurs. For example, our Risk Tool is helping identify repeat blockage areas whilst our Dynamic Sewer Visualisation and sewer monitors are providing early insight of when a sewer is going to surcharge, or overflow. Our Dynamic Sewer Visualisation technology is also allowing us to focus and increase our sewer jetting programme to cleanse critical parts of the network.

We are also increasing our programme to remove interceptors in the network. These have been identified as a direct contributor to repeat blockages, raising the risk of customer flooding. Interceptors are assets on the sewer network which are both prone to blocking and in close proximity to customer properties. Therefore, they tend to cause more issues and we have very little time to respond if they block. Our root and branch review of operations has led to a programme to remove thousands of these interceptors; 622 will be removed this year alone with more than half a million pounds set aside to do so. We will continue to identify and remove these.

Furthermore, 60% of flooding relates to our private transferred sewers. These are sewers that were transferred to us in 2012, and largely serve customers' homes running through driveways and back gardens. Upgrading these sewers, which have often not been maintained while in domestic ownership, is both costly but also disruptive. We are running a targeted cleansing and repair programme to improve them.

Complementing this work, we are also reducing the likelihood of blockages at source. Working with environmental compliance experts ECAS, we are identifying Food Serving Establishments (FSE) which cause blockages by disposing of cooking fats down the drain. We are working with them to reduce these avoidable materials clogging the sewers. This year, we have made 7,460 visits to FSEs, with an estimated 1,595 tonnes of fat, oil and grease diverted from sewers as a result.

Keep it Clear is our campaign to educate the public about responsibly disposing of cooking fats, sanitary items and wipes. This year so far, we've knocked on 98,506 doors leading to 36,528 conversations with customers.

We have long campaigned for manufacturers of wet wipes to have greater responsibilities, considering that they cause thousands of sewer blockages in our region every year. We publicly supported Fleur Anderson's Private Member's Wet Wipe Bill and have written to all the MPs in our region to highlight the number of sewage blockages caused by unflushables in their constituencies. Last year we responded to a Defra consultation on single use plastics, highlighting the problem to the government.

We are also working to reduce surface water infiltrating and overwhelming foul sewers. Flooding partners are engaged on many sustainable drainage and flood alleviation projects to combat this in urban areas where there is little space for rainwater to drain away naturally. Our partnership programme helps attract additional investment from other parties interested in reducing flooding. In 2022/23, we have invested £1.3 million and leveraged almost £3 million in partner funding to help deliver these projects at less cost to our customers.

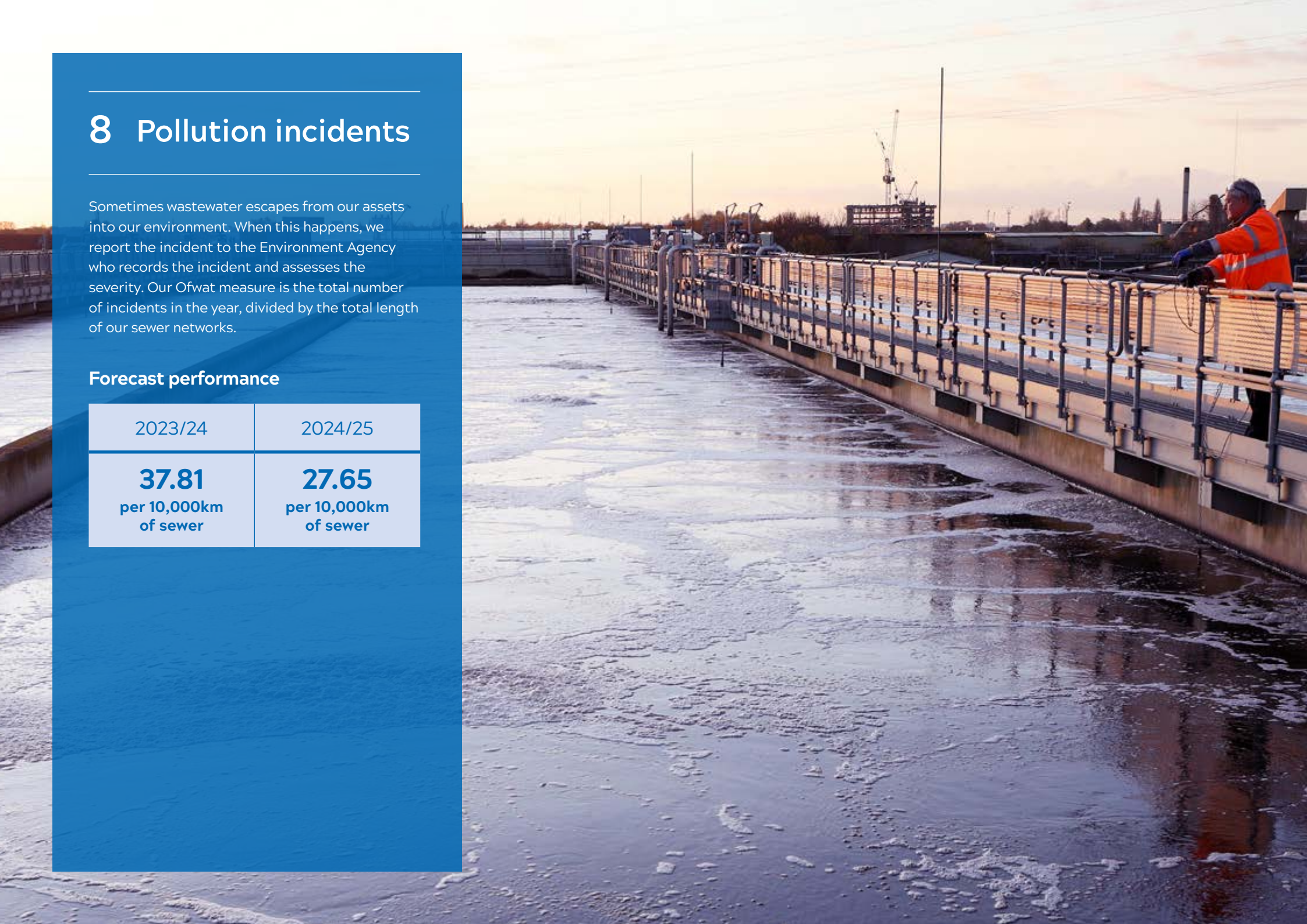
Root cause	Action	SMART target	Estimated Performance Commitment benefit
Repeat Internal sewer flooding Over half of repeat internal flooding incidents in a rolling year are attributable to blockages which have occurred more than once	Combine detailed root cause analysis with targeted interventions such as pipe repairs, relining and monitoring to address flooding incidents.	<5% of flooding incidents is a repeat by the end of 2025	**Low**
Repeat Internal sewer flooding Where the root cause is not clearly identifiable, concise data of network performance of is not available	Install sewer monitors at key locations to provide detailed insight into flooding incidents.	Install 18,000 monitors by March 2024	**Enabler**
Sewer Blockages Over 50% of internal flooding incidents are the cause of blockages	Deliver an enhanced sewer cleaning programme for sites where we think the risk of blockages is highest.	100% delivery of annual programme	**Medium**
Sewer Blockages Within many older networks, such as those in market towns, blockages are caused by interceptors/traps within smaller sewers near to properties	Remove interceptors in older areas to reduce the risk of flooding incidents caused by blockages.	Removal of 622 interceptors by March 2024	**Low**

8 Pollution incidents

Sometimes wastewater escapes from our assets into our environment. When this happens, we report the incident to the Environment Agency who records the incident and assesses the severity. Our Ofwat measure is the total number of incidents in the year, divided by the total length of our sewer networks.

Forecast performance

2023/24	2024/25
37.81 per 10,000km of sewer	**27.65** per 10,000km of sewer



Pollution incidents

Figure 19

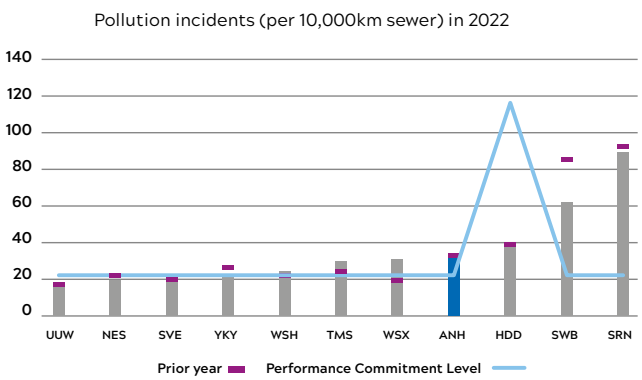
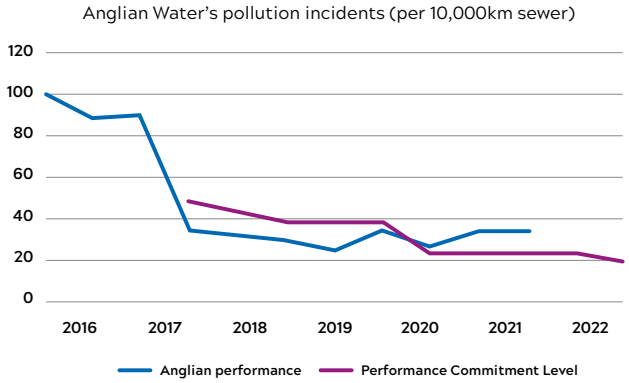


Figure 20



Where are we today?

We acknowledge our performance on pollutions is not where we, or our customers, want it to be. We are putting a huge amount of resource and effort into this area, which is detailed in our action plans on pages 35-38. We also recognise our performance is influenced by unique features of our region which pose specific challenges for us.

We operate in a drained, flat landscape, with features include long, narrow watercourses, smaller, often unmapped, channels and ditches, and assets spread across a vast rural area, often through farmland. 86% of the watercourses in our region – 67,433km – are relatively straight. 9,378kms have an angularity value of 0, with no kinks or bends whatsoever. A further 10,713km are of more sinuous, narrow water channels with bends. These properties mean pollutions can travel further and more quickly than they would in wider, meandering rivers. Having closely analysed our performance, we realise this is a unique regional feature that creates a specific challenge we need to address, and one our **Pollution Incident Reduction Plan (PIRP),** published this year, is geared towards. Although our pollution incidents have not caused the severe environmental impact commonly assumed, it can mean we are more likely to receive a higher categorisation.

These types of manmade, fenland drainage channels common in our area are also different to typical watercourses because they are slow moving and, in some cases, may have no flow at all. This can mean a discharge is completely undiluted and not able to disperse as it would in a typical watercourse. The high density of these channels means that when an escape occurs, such as a burst rising main, pollutant is more likely to reach a channel of this sort. In 2022, 44% of our serious pollutions were on unmapped, low flow or dry ditches such as those described above. Again the features unique to our region mean we can be predisposed to receiving a higher categorisation for pollutions.

Furthermore, 89% of our region is considered rural and many of our assets cross farmland. This can leave us vulnerable to diffuse pollutions, accidental damage caused to our pressurised sewer mains running under farmland, and poses additional challenges in detecting issues on our non-telemetered assets.

We realise these are unique features in the region we operate in, and one our PIRP is geared towards solving. To overcome these and to reach our goal of zero harm from our assets, we have radically changed how we think and operate. Our PIRP details what we are doing to improve our performance for the region. We have made significant changes to our business and how we work: bringing in new leadership, undertaking a root and branch review of our performance, teams and operations, and ensuring we have the right operational controls and processes to do the basics brilliantly, further technology and apply it to different asset types.

We have overhauled our management systems and assurance processes, placing a firm emphasis on the prevention of pollutions and continuous learning and improvement in all that we do.

We are starting to see positive results from the raft of activity we have underway. Around 70,000 pollutions are being prevented each year by our teams through the alert and alarm systems we have in place. Plus our lead measures, which indicate future performance, are starting to turn positive. For example, blockages on our foul sewer network have reduced to their lowest levels in five years and the performance of our Water Recycling Centres is improving. Our operational control and cultural change initiatives are evidenced by improving metrics such as self-reporting, which has increased to 87%, moving us to a green position on the Environment Agency's Environmental Performance Assessment. The changes we are making mean we now have a more comprehensive understanding of our pollutions performance across our network than ever before. However, we are taking a long-term view, as we know it will take time for our actions today to translate to positive outcomes in actual performance.

Our forecast for 2023/24 is 279 incidents (36.50 per 10,00km of sewer). By Q3 2023, we recorded 219 pollution incidents, which equates to 28.65 per 10,000km of sewer. As a result, we do not expect to meet our Performance Commitment this year and expect 2024/25 will remain similarly challenging while we continue to embed our programme of activity and make further improvements. However, from 2025 onwards, we expect a strong reduction in pollutions. We know this trajectory for performance is frustrating, as much for our dedicated staff as it is for customers and other stakeholders. We have been open about the time it will take for our action plans to translate to outcomes, but the positive results from lead indicators give us confidence that our plans are correct and we are heading in the right direction. Last year we also had substantially fewer storm spills, with one of the best results in the industry. We met our Get River Positive commitment on storm overflows, recording an average of 15 spills per storm overflow in 2022 compared to 25 in 2021. We also recorded a 54% reduction in the overall number of storm overflow spills.

In the same vein, and with a commitment to transparency, we've also been clear to report storm spills on dry days as pollutions. As companies are reporting differently across the sector, we are aware this means a true comparison across the industry is difficult.

While this reporting of dry spills impacts our Environmental Performance Assessment rating, we believe it is very much the right thing to do.

What is influencing our performance?

A number of factors are influencing our year-on-year performance versus the industry, in addition to the root causes of pollutions we are addressing.

Following the introduction of our new monitoring systems and with the installation of 11,000 smart sewer monitors this year alone, we have better visibility of our network than ever before. This inevitably means we will report more incidents, more accurately. As part of our commitment to work transparently with the Environment Agency on this, we carried out retrospective analysis, which resulted in us proactively reporting additional potential pollutions and added to the end of year position. We are one of a few companies to be doing this.

Our historic performance is also skewed on the basis we have never previously applied for special exceptions from the Environment Agency for severe storms. This is not the case for all companies and means like for like comparisons on the total number of pollutions is not possible. To put that in context, in winter 2021/22 we were affected by severe storms and flooding over a prolonged period affecting large parts on the region. We estimated we had an additional 55 incidents as a result.

Our PIRP is focused on addressing all of the main root causes for pollutions.

The following root causes account for 91% of all pollution incidents.

Blockages – These account for the highest proportion of pollution incidents – 41% in 2022 and are typically caused by fats, oils and unflushable items, such as wet wipes and sanitary items. As described in our action plan for sewer flooding on page 30, a wide-ranging programme of activity is underway to clear blockages, target our cleansing activity to best effect and educate consumers on responsible disposal of wipes and cooking fats to avoid blockages building up in the first place.

Hydraulic overload – This is where an incoming flow to an asset, such as a pipe is overwhelmed. This accounted for 16% of our pollution incidents in 2022. This is common during flash flooding and heavy rainfall. We have a vast investment programme underway to install storm tanks at key locations to take pressure off the network during heavy rainfall. These tanks store storm water until it can be released back into the sewer when flows are normal. We are also working with partners on sustainable drainage schemes and flood reduction schemes, particularly in built up areas where run-off is greater, to reduce hydraulic overload.

Civil/structural failures – This is where a pollution occurs due to burst rising mains and collapsed sewers, and accounted for 12% of pollution incidents in 2022. Our pressurised rising mains have been affected in similar ways to our drinking water mains during the drought and the volatile shrink-swell properties of the local soil types in our region. By sharing learnings across water and water recycling business areas, we are understanding more about our vulnerabilities to extreme weather and the resulting ground movement. Specialist technology called Ovarro, focused on monitoring how rising mains are performing, is helping us to predict when a burst might occur, to respond faster and to prevent problems where possible.

Building on the work of our Water division with MapleSky to understand the impact of climate-vulnerable soil types on specific assets, we have provided our rising main data for analysis. These pressurised sewer assets respond similarly to water mains. Together the research project will examine our burst main data, analysing it against other factors such as soil types and climate, to identify trends and ultimately better predict, prevent, or at least respond quickly to rising main bursts.

Electrical failures accounted for 12% of pollution incidents in 2022. The majority are caused by unplanned outages by our power provider or failures with electrical components such as control panels. We are addressing this root cause through the installation of kit which will help our assets to withstand power blips, recover more quickly following a power cut and to have the flexibility to connect alternative power sources such as generators in an emergency. We're increasing the amount of on load generator testing we carry out too and focusing on detecting deviations in the performance of our assets and intervening prior to failure. We have also changed our response to third party power failures, ensuring we respond with towable generators and tankers to stop or reduce any discharges whilst we wait for power to be restored.

Mechanical failures accounted for 10% of pollution incidents in 2022. To address mechanical failure we are fundamentally changing the way that we maintain our assets through our maintenance review. We are focusing on detecting deviations in the performance of our assets and intervening prior to failure, using machine learning and insights, moving away from a simple frequency-based plan. We've increased our stock holding of critical mechanical spares following an increase in supplier lead-times. We're also carrying out a review of our entire spares process, both of which are reducing the time it takes to obtain spares and repair assets that are out of service.

We've also returned the ownership of pumping stations to our maintenance team from our networks function to ensure greater ownership and accountability to those who spend the most time caring for this asset type.

The action we're taking

From a standing start in April 2023, we have installed 11,000 smart sewer monitors to provide us with more visibility than ever on our highest risk sewers.

We are approximately halfway through that programme of significant investment, where in total we expect to install around 22,000 monitors covering more than 11,000km of sewer. This has also been coupled with operational improvements, operational control and culture change. The changes we are making mean we now have a more comprehensive understanding of our pollutions performance across our network than ever before. The detail of our expansive programme features in our **Pollution Incident Reduction Plan** for 2023 to 2025.

The following table provides a snapshot of the most impactful activity underway and as progress continues along with our PIRP we expect our targets to become smarter.

Root cause	Actions	SMART target	Estimated Performance Commitment benefit
Blockage	ECAS – We're educating food serving establishments through proactive visits on grease management in kitchens. We're extending these visits to domestic customers to complement our widespread Keep It Clear campaign.	1500 tonnes of fat, oil and grease prevented from entering the sewer network in financial year (based on average assumptions and actual activity undertaken)	**High**
Blockage	Repeat blockage standards and process – We're building a process to identify individual repeat blockages and to understand and resolve the root cause to prevent reoccurrence at our foul sewers and pumping stations.	To have a blockage repeat rate of less than 5% in financial year	**High**
Blockage	Sewer monitors and Dynamic Sewer Visualisation – We're installing monitors on 11,000km of our highest risk sewer lengths and applying Storm Harvester technology to help us identify forming blockages early so that we can address them before they cause an escape of sewage.	For 95% of alerts from monitoring to successfully detect a performance issue over a continued 12 week rolling period	**High**
Blockage	Targeted proactive sewer cleansing – In addition to our regular sewer cleansing programme, we've instigated a programme of targeted cleansing based on analysis of our highest risk sewer lengths.	To deliver 100% of the planned sewer cleansing programme, roughly 700km (almost the length of the UK) by the end of March 2024	**High**
Blockage	Wet well cleanse enhancement – We're spending £4.8m on the cleaning of pumping station wet wells to help prevent pumps clogging with unflushables and fats, oils and greases.	To deliver 100%, of the planned wet well cleanse programme by end of financial year. This is 3,900 cleans, roughly 60% of our estate	**High**
Blockage, electrical, mechanical, civil/ structural	Pumping Station Ovarro enhancement – We're already using data through Ovarro to identify rising main bursts. This technology can also be applied to pumping stations to detect abnormalities in performance. We're looking to hone the success rate of these alerts to get ahead of potential emerging performance issues. Using Ovarro means we'll have 100% of coverage of our telemetered pumping stations.	For 95% of alerts to successfully detect a performance issue over a continued 12 month rolling period by the end of 2025	**High**
Blockage	Enhanced Screen Maintenance – We've added enhanced maintenance to screens at the start of the treatment process to prevent unflushables and large debris getting into other part of the process and causing blockages.	To maintain a monthly average of 98% of screens available for assets within the framework	**Low**
Blockage	Inlet blockage alarms – We're continually improving the algorithms we add to our telemetry data to flag potential blockages at our site inlets.	For 95% of alerts from monitoring to successfully detect a performance issue over a continued 12 week rolling period	**Low**

Root cause	Actions	SMART target	Estimated Performance Commitment benefit
Hydraulic overload	Flow control standard – We are developing and building on our current flow control standards – the way in which we test and verify that flow is being correctly measured through our treatment sites. This is an important assurance activity for our customers and regulators alike.	To implement a flow control standard process by the end of March 2024	**Low**
Hydraulic overload	Infiltration Reduction Plans – We have created 26 investigation and mitigation plans which aim to prevent the entry of water into our foul sewers from rainfall, rivers or groundwater. This helps to prevent hydraulic overload of assets in wet weather.	To deliver 25 infiltration reduction plan investigations by the end of 2025	**Low**
Civil/structural	Ovarro enhancement for rising mains – We're using existing telemetry data through the Ovarro system to help detect burst rising mains. The system can self-learn with feedback enabling us to further refine the success rate of the alerts (currently 70%), alongside our own learning of how to use the insight.	For 95% of alerts to successfully detect a performance issue over a continued 12 month rolling period by the end of 2025	**Medium**
Civil/structural	Syrinix – We've already deployed 660 pressure monitors which, with Syrinix technology, can alert us to a burst or abnormal pressure on a rising main which needs further investigation. We're extending this programme and using the outputs to mitigate and prevent future bursts.	28 monitors to be installed by the end of March 2024	**Low**
Electrical	Power resilience phase 1 – We're investing £1.2m to increase resilience to power fluctuations and increase our visibility of power status.	To deliver 345 planned power resilience outputs by the end of March 2024	**Low**
Electrical	Power Resilience – Enhanced visits to generators and increased testing on load of generators on WRCs.	100% of generator auto start for unplanned power outages by end of 2025	**Low**
Mechanical, electrical	Maintenance review – We're reviewing the way we carry out maintenance activities across the business. We're looking at condition-based maintenance rather than frequency-based maintenance. We believe this will help us to spend more time and effort on the assets requiring most attention.	Completion of the review of maintenance activities as per the plan by the end of 2025	**Enabler**
Biological	Sludge base plan review – We are fundamentally changing how we forecast and collect sludge from our Water Recycling Centres. As well as adjustments to our plan to enable better forecasting, our teams will be able to order and track the timings of sludge removed from their sites to maximise the biological treatment capacity and improve the quality of the effluent returned to the watercourse.	By end of 2025 to move a daily average of 6500m^3 of sludge from our sites	**Low**

Root cause	Actions	SMART target	Estimated Performance Commitment benefit
Biological	Sludge blanket detection review – We need a 'sludge blanket' as a fundamental part of our biological treatment process – like the good bacteria in our own guts. We're re-checking all sludge blanket telemetry control points to ensure they are operating effectively. We've started this activity and found almost a third benefitting from this scrutiny.	To have 143 sites with sludge blanket detectors fail safe by December 2023	**Low**
Biological	Sludge dry solids programme – This is another activity as part of our sludge management focus. We need to thicken sludge on our sites to ensure optimal removal, storage and transportation. This programme puts significant focus on the thickness of this sludge measured in 'dry solids' as part of our operational control process.	Improving sludge quality by increasing dry solids from sites with mechanical thickeners to 5% by March 2025	**Low**
Biological	Sludge tank level monitors – Similar to our sludge blanket detection, our sludge tank level monitors provide another crucial control point. We are committing resource to complete an end-to-end review of these assets to ensure they record accurately to prevent spills from these assets and maximise storage.	Install Vega monitors across 500 sites and implement use of VIS (Vega Inventory System) to enable real time visualisation of sludge levels by end March 2025	**Low**
Biological	Info-Tiles – We're exploring the opportunity to provide early warning of biofilter performance issues using data we already collect through our telemetry system. If the concept works, we will consider how it can be applied across 100 of our sites.	70% of alerts raised to successfully detect a performance issue by the end of the trial in October 2024	**Low**
Biological	FE Pod Monitors – We have been exploring the opportunity to utilise mobile monitoring to give us real time visibility of the performance of high risk sites without permanent, continuous final effluent quality monitoring. We're testing eight types of probes across five sites and if successful will expand this.	To have visibility on 100% of No Fails Left sites that have remote performance monitoring	**Enabler**
Operator error/ interference	Respond to data – We're helping our expert teams develop the skills and mindset to look for performance issues and pre-empt asset failure. This is part of our shift from a reactive to preventative approach.	Continuous delivery of ongoing activities promoting a proactive investigation mindset	**Enabler**
Operator error/ interference	Zero Pollutions Mindset – We've always had a passion for protecting the environment but our zero pollutions mindset takes this further and ensures that consideration for the environment is woven into everything we do.	Continuous delivery of the Zero Pollutions campaign activities	**Enabler**
Process improvement	EDM onboarding – We're creating a system to identify the cause of a storm overflow alarm activation. Where a dry day activation occurs, we can dispatch resource to understand if the alarm is genuine and/or resolve the issue.	100% of the EDM programme covering circa 1,400 storm overflows delivered by the end of 2023	**Medium**

Root cause	Actions	SMART target	Estimated Performance Commitment benefit
Process improvement	Assets out standard – We're improving visibility of assets which are offline for repair or replacement and driving to reduce the time these assets take to be brought back into service. This helps ensure that we have resilience across our asset base.	To have 100% of equipment online or with a full mitigation plan in place by end of 2025. This covers the millions of individual assets across our network	**Medium**
Process improvement	Action limit standards – We are reviewing and enhancing the operational controls and measures we have for our Water Recycling Centres to ensure sharp focus, visibility and appropriate standardisation to optimise the performance of our sites as part of a continuous improvement approach.	The action limits for 100% of sites to have been reviewed by end of March 2024	**Medium**
Process improvement	Enhanced Storyboard – Storyboards are our mechanism for sharing information with the Environment Agency when we have a pollution event. We're enhancing these to improve the quality and detail of information we provide.	To have an average of 90% of Storyboards completed within the 10-day service level agreement in a rolling 12-week period by the end of March 2024	**Enabler**
Process improvement	Improved root cause analysis process – We're extending and improving the depth of our root cause analysis to better understand where we should prioritise investment and resource to drive down pollutions.	Defined root cause methodology for all incident types (5y's, Fishbone, full SoLogic investigation) by the end of March 2024	**Enabler**
Process improvement	Urgent deployment asset fleet – We have invested in mobile equipment and assets which can be deployed temporarily to support sites with performance issues to prevent them from becoming non-compliant and discharging above permitted limits.	All equipment acquired in financial year as per urgent deployment asset fleet plan	**Enabler**
Response	Enhanced alarm approach – We're continuing work on our alarm estate to enhance what is presented to our alarm handlers and ensure the correct priority is against each alarm. We've already made great progress in moving towards being compliant with the industry standard (EEMUA).	To have a weekly average of 4000 alarms as per the EEMUA standard	**Enabler**
Response	Enhanced TankR application – We've created an app which helps our teams prioritise and understand availability of tankering resource across our business. We're refining and rolling out its use across the tanker fleet.	To maintain an average 1 planned tanker to every 0.5 reactive tankers throughout the financial year	**Enabler**
Assurance	Water Recycling Centre audit programme – As part of our 'plan do check review' approach, we are focusing additional proactive assurance activity on our high risk WRCs through our expert process science team, to provide complete rigour and confidence in our permit compliance and management system.	Within each financial year complete 100% of audits, implement mitigation where possible and record actions identified. (A total number cannot be shared as the programme is under legal privilege)	**Low**
Assurance	Operational Control – We're giving all levels of our business visibility of how they are performing against our key objectives and encouraging discussion which enables us to remove barriers, raise risks and action great ideas. We're restoring autonomy and accountability to those who have the power to make a difference through our operational control structure	Embed Operational Control framework, performance measures and communities of practice by early 2024	**Enabler**

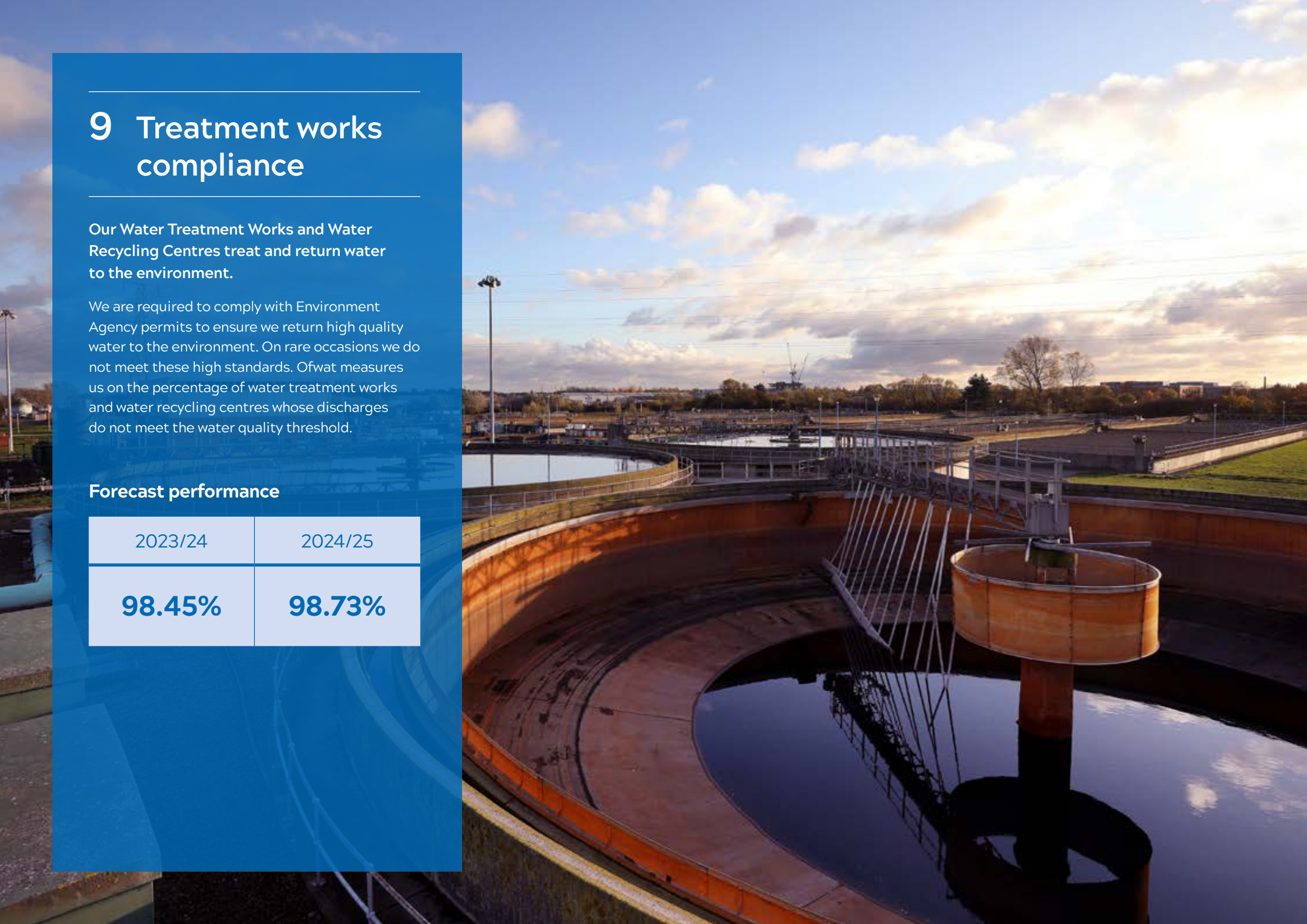
9 Treatment works compliance

Our Water Treatment Works and Water Recycling Centres treat and return water to the environment.

We are required to comply with Environment Agency permits to ensure we return high quality water to the environment. On rare occasions we do not meet these high standards. Ofwat measures us on the percentage of water treatment works and water recycling centres whose discharges do not meet the water quality threshold.

Forecast performance

2023/24	2024/25
98.45%	**98.73%**



Treatment works compliance

Figure 21

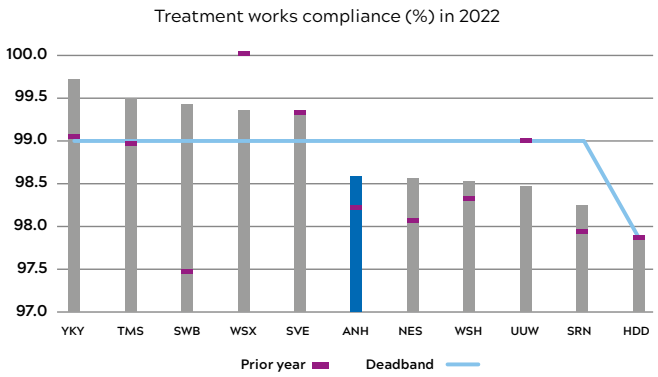
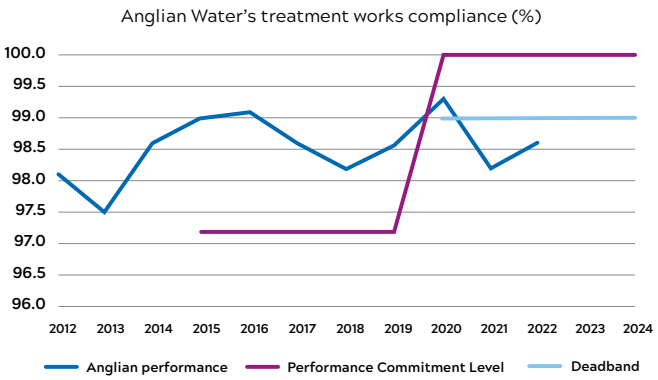


Figure 22



Where are we today?

Our performance on treatment works compliance has improved this year. This is due to the actions we're taking, detailed in our **Pollution Incident Reduction Plan (PIRP)**. For example, we are better managing sludge through the treatment process. Additionally, having greater visibility of the performance of our treatment assets means we can predict issues and remedy them before a failure occurs.

Historically, we have met or been close to meeting the PCL, however, Ofwat has challenged us to go further and increased our PCL to 100% for the current five-year period. The level we must meet before penalty applies is 99%, and in 2022 we were 0.43% off that target.

Our calendar year end forecast is 98.45%, which represents 13 failures – 10 on Water Recycling Centres, three on Water Treatment Works. Our Business Plan (2025-2030) proposes the necessary investment to bring us closer to target, helping ensure the many treatment sites we operate, often in remote, rural locations, are well monitored and managed to achieve our ultimate ambition of no pollutions from our assets.

What is influencing our performance?

Sludge is a by-product of the water recycling process. It's a mix of the organic matter from human waste and food waste particles that need removing from the water in order to treat it. Ensuring sludge levels are correct throughout the treatment process is critical to the effectiveness and compliance of our treatment works.

High sludge levels hindering the treatment process

High levels of sludge is the biggest single root cause of compliance failures for our Water Recycling Centres and tends to peak during weather events, when our tankers are diverted from sludge removal to help with other operational issues.

It's critical to keep sludge moving through our processes: from removing water and thickening on site, to optimising the use of tankers and scheduling sludge removal from sites.

To help us, we have a sludge monitoring focus group to manage sludge levels. The group has identified how we can increase the thickness of sludge on sites and increase storage capacity, allowing more to be transported, reducing the number of tankers required.

We are fundamentally changing how we manage and prioritise sludge processes and we are engaging our people to use new processes and management systems. Both these things involve cultural change which is likely to take a while to fully embed. We have learnt from previous changes and have set up change projects to roll out the changes in a phased manner, learning as we go.

Addressing treatment failures

We are auditing the functions and processes of our water recycling centres and appreciate even more needs to be done to address treatment failures. High-risk centres need a greater focus and workers on site need greater autonomy to share knowledge, problem solve, embed best practice and reduce non-compliance incidents. We are exploring smarter ways to proactively identify performance issues and have taken a root and branch review of operational excellence, to help our experienced teams do the basics brilliantly.

Process and management system inconsistencies

We are improving our processes by sharing the lessons learnt from failures or poor performance on our assets. We are collaborating through sharing information, and feeding it into a central business platform, to ensure we are all learning from a shared invaluable source of data.

The action we're taking

Addressing compliance failures

At the three Water Treatment Works where we had compliance failures, we are implementing a range of actions to improve performance. This includes: review of all run-to-waste monitors, review of re-order frequencies and a capital scheme to reinstate ability to return waste flows to the head of the works.

Sludge levels

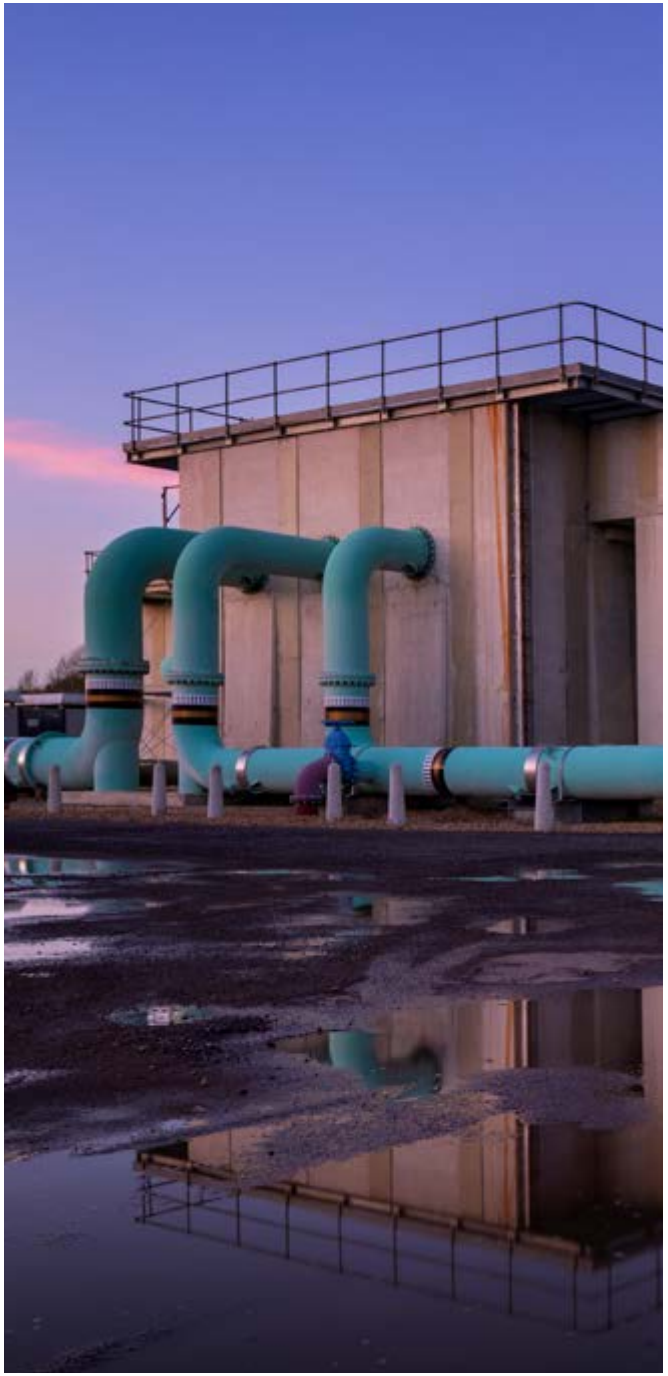
We are installing level monitors on all sludge tanks, alerting us to an accumulation of sludge on site which poses a compliance risk. We are also changing how we schedule and optimise the use of our tanker fleet. Our sludge base plan gives visibility of tanker schedules to the treatment teams enabling them to optimise sludge thickness before the tankers arrive, ensuring more is removed, improving efficiency and reducing overall compliance risk. Sites also have a target to improve sludge quality, by increasing dry solids to 5% by March 2025.

Performance and asset failure

We will increase audits of high-risk water recycling centres, focusing on functional, process and management system checks. Sludge blanket detectors will be checked to ensure they are alerting us to any problems, which are a key part of the biological treatment process. Following Operational Control principles local teams will be given greater autonomy and accountability, enabling them to identify potential issues and problem-solve quickly. Maintenance technicians will have the freedom to self-select work, based upon their urgency, location and skill set, and they'll have access to a new app enabling them to manage their workload and track and fit spares, increasing efficiency.

Inconsistencies

We are aligning our internal investigation and root cause analysis business processes, ensuring they feed into a central tracking system, so we can more easily identify trends and their outcomes, and prevent similar issues reoccurring.



Root cause	Action	SMART target	Estimated Performance Commitment benefit
Sludge Management Increase in sludge levels at sites hindering the treatment processes. This has been evident during wet weather where we have prioritised other tanker activity over routine sludge movement.	Sludge base plan review – We are fundamentally changing how we forecast and collect sludge from our Water Recycling Centres. Our teams are feeding in up-to-date sludge trends which enables better forecasting and they are able to track the timings of sludge movements enabling them to optimise on site thickening activities.	By end of March 2024 we aim to move a daily average of 6500m³ of sludge from our sites while maintaining sludge stock levels below 65%	**High**
	Sludge dry solids programme – We need to thicken sludge on our sites (i.e. separate out more water) to ensure optimal removal, storage and transportation, freeing up space on site and allowing space for removal or more sludge from the process.	Improving sludge quality by increasing dry solids from sites with mechanical thickeners to 5% by March 2025	**Medium**
	Sludge tank level monitors – By installing monitors we will gain accurate data on sludge levels. This will give visibility of sludge stocks and highlight potential site risks.	Install Vega monitors across 500 sites and implement use of VIS (Vega Inventory System) to enable real time visualisation of sludge levels by end of March 2025	**Low**
	Enhanced TankR application – We've created an app which helps our teams prioritise and understand the availability of tankers across our business. We're refining and rolling out its use across the tanker fleet.	To maintain an average 1 planned tanker to every 0.5 reactive tankers by early 2024	**Enabling only**

Treatment Process Failure Asset failure and declining asset performance all contribute to compliance failures.	Scheduling and parts management review – We are giving our maintenance technicians autonomy to self select work to allow them to prioritise urgent and important jobs, reduce travel between jobs and select jobs suited to their skill set. We are also creating an app which allows technicians to track spares and more efficiently plan jobs to refit them.	Spares jobs to be available to the technician 24 hours after delivery of spares Reduce travel time between jobs from a baseline of 30.2 mins Increase in total number of maintenance jobs completed from 2022 3 month average of 12,291 jobs	**Medium**
	Water Recycling Centre audit programme – We are focusing additional proactive assurance activity on our high risk WRCs through our expert treatment and process science teams. This is to provide confidence in how our processes are functioning and the robustness of our management system.	Within each financial year complete 100% of audits, implement mitigation where possible and record actions identified	**Low**
	Sludge blanket detection review – We need a 'sludge blanket' as a fundamental part of our biological treatment process. We're re-checking all sludge blanket telemetry control points to ensure they are operating effectively.	To have all 143 sites with sludge blanket detectors with the detectors confirmed as fail safe by end of December 2023	**Low**
Processes and Management Systems Inconsistencies in processes across different failure types make it difficult to track trends and share knowledge.	Environmental Protection Plans and Root Cause Analysis – achieve a consistent cross-business approach to investigations and root cause analysis following compliance and pollution incidents ensure actions are communicated and completed, preventing recurrence of issues.	Complete root cause analysis for every authorised parameter a treatment works has to comply to, including all failures and Cat 1-3 pollutions. Record all actions on the central action tracking system. The target is 100% compliance with the process by early 2024	**Enabler**
	Operational Control and Communities of Practice – We are giving all levels of our business visibility of how they are performing against our key objectives and encouraging discussion which enables us to collaborate more freely, identify trends, raise risks and action great ideas. We are restoring autonomy and accountability to those who have the power to make a difference through our Operational Control structure.	Embed Operational Control framework, performance measures and communities of practice by early 2024	**Enabler**

Glossary

AID	Accelerated Infrastructure Delivery – a Defra initiative to advance investment in water industry infrastructure.
AMP	Asset Management Plan – a five year period covered by our investment plans. 2020-2025 is AMP7. 2025-2030 is AMP8.
CRI	Compliance Risk Index – the Drinking Water Inspectorate's preferred measure for indicating the overall quality of the drinking water supplied over a period of time.
Deadband	For some performance commitments, Ofwat allows some leeway around the PCL before financial penalties apply.
DMA	District Metered Area – an area that is isolated and only has one (or a few restricted) feed(s) of water. This feed is metered, and the volume of water supplied to the area can be regularly monitored to check for leakage.
DSV	Dynamic Sewer Visualisation – the conversion of data from in-sewer monitors to real-time information about the state of the sewer and the possibility of emerging problems.
EDM	Event Duration Monitor – A monitor to record when a sewer or storm overflow is discharging. This is measured by the number of spills at each storm overflow point and the number of hours an overflow discharged for.
EPM	Enhanced Pressure Monitoring – the conversion of data from network monitors to real-time information about the pressures in the mains and potential transients. Enables pressure optimisation.
Get River Positive	Get River Positive is a programme of work to protect and revitalise rivers.
Interceptor	A 'U-bend' in a sewer, commonly installed in older networks but providing little benefit. Interceptors are particularly prone to blocking and can be removed to improve flooding performance.
Performance Commitment	A measure chosen to track the delivery of outcomes which customers say they value.
Performance Commitment Level (PCL)	A specific level of performance set by Ofwat for water companies to achieve.
PRV	Pressure Reducing Vessel – a device which allows the lowering of pressure in a water network.
Supply pipe	The pipe which transports drinking water from our main (typically in the street) to the customer's property. It is owned by the customers rather than the water company.
Storage point	A tank containing treated water. Includes storage tanks on water treatment works and service reservoirs and water towers within the distribution network.
Transients	Water hammer (transients) is the result of a pressure surge, or high-pressure shockwave that propagates through a piping system when a fluid in motion is forced to change direction or stop abruptly, such as when we open or close a valve in a water network. Major pressure changes like this can damage the pipe itself.
Water Recycling Centres (WRC)	We use this term, rather than sewage treatment works, to describe the facilities which return used water to a condition where it can be safely discharged back to rivers or the sea.
Water Treatment Works (WTW)	Our assets that clean, treat and supplies water to our customers.

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