Summary of our Drainage and Wastewater Management Plan 2025–50

May 2023

Introduction

Our Drainage and Wastewater Management Plan (DWMP) is our long-term look at what we need to do to keep sewers flowing and recycle wastewater before returning it safely to the environment.

Our plan uses data and evidence to understand the current and future challenges we face, including:

- The impacts of climate change and more extreme weather like flooding and droughts.
- The impacts of changes in population. Up to 800,000 more people will need new homes in our region by 2050 – putting even more demand on our wastewater networks and treatment works.
- What we need to do to protect, improve and restore the environment.

We worked with over 75 organisations across the South East to develop our DWMP. Working with these partner organisations helped us understand the risks to people and the the environment, and where we can deliver the biggest benefits. We've also been able to understand where we can work with our customers and communities to prevent rainwater entering our sewers and stop them becoming blocked.

Our DWMP sets out how we'll improve the reliability and resilience of our systems and invest to treat wastewater to even higher standards. We'll focus on reducing pollution incidents, reducing the number of discharges from storm overflows, preventing blockages and enhancing wastewater treatment.

We'll do this by:

- working in partnership and through collaborations with others to create greener communities
- increasing the use of catchment and nature-based solutions
- making sure our wastewater treatment works (WTWs), pumping stations and storm overflows work as they are meant to and can withstand more frequent extreme weather conditions
- innovating and adopting new technologies that reduce the impacts on the environment and the costs to our customers.

- Every day we collect, treat and recycle **1.5 billion litres** of wastewater from homes and businesses across our region.
- Our **381** wastewater systems and networks include over **39,900km** of pipes and **3,476** pumping stations.

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How much does our plan cost?

Our ambition is to significantly reduce discharges from storm overflows, sewer flooding and reduce nutrients released into the environment from our treatment works. This comes at a cost. Our plan identifies the need to invest an additional £7.7 billion between 2025–50 to manage and reduce the risks we've identified, improve our resilience and protect and enhance our environment.

This represents an increase of £233 for the average annual household wastewater bill by 2050 compared to 2020–25 bills.

Planning for uncertainty

We face an uncertain future. We can't fully predict the impacts of climate change, but we expect to experience more extreme weather, such as flooding and droughts more frequently. We expect there to be less rain overall but with much heavier summer storms and warmer, wetter winters.

Based on local authorities' plans, we think there'll be around 800,000 new homes in our region by 2050. Most of these will be concentrated in new Garden Cities, as well as many existing communities expanding. We work with developers to plan and deliver wastewater services for new homes that have been approved by the local planning authorities.

We've taken an adaptive planning approach for our DWMP. This means we've considered how the impacts of climate change, population growth and new technology could vary in the future so our plan remains flexible and able to adapt to future changes. This includes looking at a "most likely" scenario and the investment that's needed in most, if not all, of the future scenarios. We'll regularly review our plan, the challenges we're facing and the new opportunities we've identified to adapt our plan if we need to.

What we've heard from our customers and stakeholders

We worked with other organisations to develop our DWMP and consulted customers through on-line consultations and customer insight panels.

We held 33 workshops with 75 organisations across our region and hosted 12 webinars and 41 meetings to develop options for specific wastewater systems. The partner organisations included county, unitary and local councils, catchment partnerships, environmental groups and our regulators.

We received comments and feedback throughout the development of our plan that has shaped the final DWMP. We worked together to decide which planning objectives to include in our plan and in developing the risk assessments. Our register of stakeholder comments and our statement of responses to the consultation are shared on our DWMP website.

We consulted partner organisations and customers on our draft DWMP in summer 2022. The responses to the consultation told us that:

- **66% said we had identified the right challenges and 60% supported our approach to meeting them**
- **90% agreed we must continue to work with partners and communities to tackle the risks**
- **94% agreed we need to separate rainwater from our sewers to prevent storm overflow spills**
- **70% want us to use nature-based solutions to tackle flooding and pollutions rather than 'traditional' storage tanks**
- **83% want us to implement solutions that provide longer-term community and environmental benefits rather than cheaper, short-term solutions**
- **64% thought we should prevent all the risks – even if this meant a rise in customer bills.**

What we're doing, and what we'll do

Protecting and improving water quality

Our customers, communities and regulators expect us to do more to protect the health of our rivers and seas.

These are fundamental for local tourism, shell fisheries and recreation as well making sure wildlife can thrive in our region. We need to improve how we collect, treat and recycle wastewater to meet these higher standards.

The Environment Agency (EA) issues permits for our wastewater releases. These set the high standards we need to meet as we treat and recycle wastewater before returning it to the environment. We're constantly investing to meet higher standards and manage the impacts of climate change and population growth.

We've introduced new technologies, such as membrane plants to extract harmful chemicals and ultraviolet disinfection to reduce bacteria in treated wastewater. We're constantly innovating to continue improving and recycle wastewater to higher standards.

We're using technology better to limit the levels of nutrients, such as phosphorus and nitrogen, entering our rivers and streams. This is vital to protecting locally, nationally and internationally important habitats. It also enables new housing development, which is some areas can't go ahead at the moment because these could increase the levels of these nutrients in waterbodies.

We need to introduce new methods to further reduce nutrients and meet new challenges like microplastics, pharmaceuticals and other chemicals found in wastewater which are impacting the environment. We want to prevent chemicals entering our networks by working with communities, customers, landowners and other stakeholders like government and industry.

It's not all about improving our wastewater systems. Some issues we need to tackle at source to establish more affordable and sustainable ways to manage water. We want to use natural solutions by working with nature in the river basin catchments to promote the greening of towns and cities, so more rainwater is captured and re-used. Our customers will see more raingardens, wetlands and ponds being used to separate rainwater from foul sewers, and as alternative treatment options.

Nature based solutions will help us lower our carbon footprint and increase biodiversity by providing new habitats for wildlife, as well as increasing access to nature for our customers and communities.

We'll:

- Collaborate with planning authorities and other stakeholders to find sustainable solutions to reduce nutrients and unblock development in certain areas
- Identify more opportunities for nature-based solutions, like wetlands
- Work with our regulators and other partners to reduce the amount of phosphorus from treated wastewater released into freshwaters by 80% by 2038
- Improve our wastewater treatment to achieve the new 'technically achievable limit' permits at our sites in nutrient neutrality areas by 2030.

What we're doing, and what we'll do

Reducing flooding and storm overflows

Sewer flooding

Sewer flooding is one of the most devastating things that can happen to our customers. We're committed to reducing the number of customers' homes and businesses at risk from flooding from our networks.

Around 70% of flooding inside homes is caused by blockages in our sewers. Between 2017 and 2019 there was an average of 515 internal flooding incidents per year. Our flooding reduction programme has reduced this to 394 incidents in 2020–21.

Putting things in drains that shouldn't be there is the main cause of blockages. This includes fats, oils and grease (FOG) and 'unflushable' items like wet wipes, plastics, sanitary products and nappies. All water companies are working with their customers and government to educate people and prevent this happening.

We'll target customer awareness programmes to change behaviours in blockage 'hotspots'. We also need to increase the use of CCTV surveys and sewer surveillance so we can tell when a blockage is forming. This will give us time to flush a potential blockage away before it causes flooding.

We'll:

- Enhance our customer education programmes to reduce blockages
- Extend our programme of proactive jetting to clear debris before blockages occur
- Continue investing in smart technologies and installing thousands of monitors to provide early detection of blockages and clear them before pollution or flooding happens
- Improve how we respond to emergencies to clear blockages and repair equipment to protect customers' homes, our communities and environment.

Sewer flooding can also occur outside of homes affecting local roads and property. This is either down to blockages in sewers or as a result of too much rainwater getting into the sewers.

Up to 97% of the flow in our sewers during a storm can be rainwater running off roofs, paved areas such as roads and pavements, or even parks and green spaces. When rainwater enters a sewer in a storm, it can become full. This can happen very quickly during a storm and lead to flooding of homes and businesses.

Our climate is changing and we're seeing more intense localised storms which can overwhelm our drainage systems. We predict twice as many homes could experience sewer flooding by 2050 if we don't act now.

Storm overflows

Storm overflows act as “safety valves” in our networks to prevent flooding to homes, businesses hospitals and schools during heavy rainfall. Sewer networks were designed with these, and they work like an overflow in sinks and baths to prevent water spilling out if we leave the tap on. The storm overflows spill the excess water, which is diluted sewage, into local rivers or the sea.

We know our customers find any release of sewage to the environment unacceptable. Our DWMP sets out how we’ll reduce our use of storm overflows.

We have already reduced our use of overflows by building larger storage tanks at our WTWs or within the sewer network. These are effective and relatively easily to build but are less sustainable than nature-based solutions.

This is why we’ve explored an alternative approach to tackle the problem at source. Preventing rainwater entering our sewers, or slowing it down, by using more greenspaces including ponds, wetlands and woodlands is a better, long-term and more sustainable option.

These types of nature-based solutions will help to protect communities from flooding, reduce our use of storm overflows and create habitats for people and wildlife to enjoy.

We’re working with local authorities and owners of public buildings and industrial estates to find ways to capture and store more rainwater and prevent it entering our networks.

Doing this in built up, and often historic, towns and cities can be difficult and takes time. If we can’t stop rainwater entering our sewers, we’ll have to rely on new more expensive, carbon-intensive infrastructure.

We set up our Cleaner Rivers and Seas Task Force in 2021 to develop and trial six ‘pathfinder’ projects to investigate new ways to reduce storm overflow use and the risk of flooding. Find out more about these in our **Pathfinder Update**.

Our plan for reducing flooding and storm overflows is to:

- invest more than £2.9 billion over the next 25 years to significantly reduce how much we use storm overflows. By 2050, we’ll reduce our use of them by 75% - to an average of under 10 from each of our 979 overflows.
- Start by tackling 155 storm overflows that release close to high priority sites, such as shellfish waters, between 2025 and 2030. We’ll prioritise delivering natural flood management and nature-based solutions, over traditional engineering solutions, like concrete storage tanks.
- Act to reduce the risks to homes and businesses that have been affected by sewer flooding, where cost effective to do so, by getting rainwater out of sewers.
- Continue to improve bathing water by investing in sewer misconnections and other activities with partner local authorities to achieve excellent classification for all 84 bathing waters.
- Ensure that shellfish waters are protected from contamination from human pathogens through disinfecting sewage releases to comply with, or exceed, the requirements.

“This is the beginning of the end of our reliance on storm overflows.”

Lawrence Gosden,
CEO, Southern Water

What we're doing, and what we'll do

Reducing pollutions and protecting groundwater

Our assets are ageing, and some are reaching the end of their life. We're also facing more extreme weather events more frequently. This will happen even more often as our climate changes.

We need to make sure our wastewater systems – our treatment works, pumping stations, sewer networks and storm overflows – all work as they're designed to and can withstand more extreme weather.

We work hard to maintain their overall health and condition to comply with our permits, prevent failures and reduce pollution incidents. However, we need to invest to improve our systems to increase their resilience and reduce pollution.

We investigated all 381 of our wastewater systems to understand the risks in each of them and identified the main causes of pollutions which are:

- Sewer collapses and rising main failures
- Our equipment failing
- Blockages in our network from fats, oils and grease and other items such as nappies and wet wipes.

Our **Pollution Incident Reduction Plan** sets out how we are already tackling these issues.

This includes working closer with our customers and more proactive maintenance programmes to help prevent blockages.

We'll increase the resilience of our systems by identifying electrical and mechanical equipment that is nearing the end of its life and needs to be replaced or refurbished to make sure it doesn't break down.

We're also concerned about groundwater pollution. Groundwater can seep into sewers, and sewage can leak out, especially if the sewer is in poor condition – and in the worst cases, sewers can collapse. We know 25% of our storm overflow releases are due to groundwater getting into the sewers.

Collapsed sewers create risks to our groundwater sources. We've identified 10 groundwater zones where we need to repair or replace sewers in poor condition to protect the quality of the water underground. This will reduce the risks to our drinking water sources.

We'll:

- Continue to prioritise and focus on our Pollution Incident Reduction Programme and prevent pollution of the environment
- Review operational procedures to improve the reliability and resilience of our sites and equipment
- Reduce groundwater infiltration by refurbishing and relining sewers in groundwater safeguard zones
- Proactively replace sewers and other ageing infrastructure at risk of failure.

Next steps

Our DWMP, alongside our Water Resources Management Plan (WRMP), are the foundation for a sustainable, resilient and affordable future for water management in the South East.

We're working to deliver these plans together to integrate water cycle management and to reduce the cost of water utilities for our customers and protect the environment.

We'll use the DWMP to inform our Business Plan for 2025–30, which we submit to Ofwat, the water industry economic regulator, for funding for each of the five-year "price review" (PR) periods.

The business plan for 2025–30 will be submitted to Ofwat this year. This is our PR24 business plan. Ofwat decides, based on the evidence we submit in our PR24 business plan, how much we can charge our customers for the next five years to provide our services, confirming how much we can invest in our wastewater systems to reduce the risks to customers and the environment. We will then know what investment needs identified in our DWMP we can take forward and deliver.

We will update our plan every five years to incorporate changes, report on what we've delivered so far, and plan for the next investment periods.

Southern Water

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