



Storm overflow action plan

A guide



Introduction

This guide is designed to complement our Storm overflow action plan which is in a spreadsheet format, as required by the Department for Environment, Food and Rural Affairs (Defra).

Defra has requested a detailed assessment and action plan for every storm overflow from every water and sewerage company in England. This guide explains the data we've provided to them and published on our website.

The Storm overflow action plan is a working document, rather than a final plan. Our business plan covering the period from now to 2030 is still under discussion, including with our shareholders and regulators, so will change before completion.

Subsequent business plans will also be subject to change and approval, and this plan will change to reflect this. We also expect technology, modelling, partnerships and other key factors to develop further into the future, driving changes in our current proposals as we look nearer to the 2050 horizon.

Storm overflows take place at our sewage treatment works and on our sewer network. They allow us to deal with excess flow due to rainfall and prevent sewer flooding in our homes, gardens and streets. These discharges are regulated by the Environment Agency who issue Environmental Permits which set out the circumstances when storm discharges can happen.

At Thames Water, we recognise that all discharges of untreated sewage are unacceptable. In April 2022 we set out our first [River health report](#), describing how we planned to improve the health of rivers in the Thames catchment. In April 2023 we updated the plan to include information on our progress and plans going forward. The information in this Storm Overflow Action Plan should be read in the context of our River Health Report.



Defra published their Storm Overflow Discharge Reduction Plan in August 2022, setting out new targets for water and sewerage companies. These included:

Headline targets:

- Water companies will only be permitted to discharge from a storm overflow where they can show that there's no local adverse ecological impact
 - The headline target must be achieved for most (at least 75%) of storm overflows discharging in, or close to, high priority sites by 2035
 - It must be achieved for 100% storm overflows discharging in, or close to, high priority sites by 2045
 - Water companies must achieve this target for all remaining storm overflow sites by 2050
- Water companies must significantly reduce harmful pathogens from storm overflows discharging into, and near, designated bathing waters. This can be done by either applying disinfection, or reducing the frequency of discharges to meet Environment Agency spill standards by 2035
- Storm overflows won't be permitted to discharge more than an average of 10 rainfall events a year by 2050
- Water companies will be required to ensure all storm overflows have screening controls

Our plan:

Evaluations and proposals for 620 storm overflows. These include assessments of:

- 293 combined sewer overflows
- 233 overflows for storm discharging and emergency overflows at sewage treatment works
- 94 overflows for storm discharging and emergency overflow at sewage pumping stations

Our wastewater network is permitted to discharge into a wide variety of waterways. This plan outlines where we'll take action to reduce the use of storm overflows – from the chalk streams of the Cotswolds in the west of our region, to the vast Thames Estuary in the east.

In our action plan we include:

- 543 storm overflows which discharge into inland water
- 77 storm overflows which discharge into the transitional waters of the tidal Thames Estuary

The schemes that we'll be delivering are varied and include a range of green and grey solutions. Our 25-year Drainage and Wastewater Management Plan (DWMP) has a focus on natural solutions, with more 'green' nature-based solutions than ever before. For example, our sustainable drainage (SuDS) programme for London and the Thames Valley will cover around 7,500 hectares, which is reflected in the data in the plan.

Many of the plans for our overflows are a combination of solutions, including green and grey, made up of increasing storage for storm water, developing sustainable drainage solutions, incorporating wetland treatment, sealing of sewers and increasing treatment capacity at our sewage works.

The storm overflow action plan is looking at a 25-year planning period. Although we're showing how we're aiming to meet our obligations in the long term, we're planning to see:

- 25 storm overflows addressed by Thames Tideway Tunnel by the end of 2025 (AMP7).
- 92 schemes delivered during 2030 - 2035 (AMP8), although we are working with our regulators to deliver a higher target of 107. In the following asset management planning periods (AMP), we expect to deliver:
 - A further 115 sites meeting targets during 2030 - 2035
 - 168 locations during 2035-2040 (AMP10)
 - 169 locations during 2040 - 2045 (AMP11)
 - 51 locations during 2045-2050 (AMP12)

Defra's request for information included:

- Storm overflows, including permit details, and if they discharge into high priority sites
- Spills (number and duration) and if they originate from surface or groundwater
- Outcomes of any previous assessment of overflows, with identified issues and proposed solutions
- When improvements will be delivered, including interventions funded in the current Price Review 19 period (delivered by 2025) vs interventions proposed for future price reviews
- Projected outcomes of interventions

We completed the template provided by DEFRA and the explanatory notes below relate to different columns on the spreadsheet.

Permit details (columns A-K)

- This information aligns with our PR24 WINEP plan. We've answered 'N/A' for overflows which we don't have an environmental permit for yet.

Details of receiving environment (columns K-X)

- This information aligns with our PR24 WINEP plan.
- Column M – SOAF (PR19) 'Environmental Impact' aligns with the latest output of our Storm Overflow Assessment Framework (SOAF) Investigations, submitted to the Environment Agency in June 2023.

Details of spills (columns Y-AC)

- This information aligns with our 2022 EDM Annual Return, as submitted to the Environment Agency in February 2023.
- We've answered 'N/A' where we don't have EDM data.

Proposed Solution where known (columns AD-AM)

- The proposed solutions that have been detailed here are a snapshot view of dynamic programmes as of June 2023 and are subject to change. This may be as a result of investment decisions, additional data, operational influences, or anything else that may change the optimal solution or delivery timescale.

Delivery year of WINEP storm overflow improvement scheme in AMP 7 (column BV)

- Some of our AMP7 (2020 – 2025) schemes will take longer to deliver than initially expected. These schemes will be delivered between 2025 and 2030. When our delivery programme is confirmed, the completion dates of schemes within this 2025-30 period will be published. We will keep our investment plans updated regularly.
<https://www.thameswater.co.uk/about-us/performance/river-health/frequently-asked-questions/information-about-specific-sites>

Terms and acronyms	Definition
AMP	An 'asset management plan' period is the five-year period covered by a water company's business plan. These are numbered with AMP1 referring to the first planning period after the water industry was privatised, ie the period from 1990 to 1995. The current period (2020 – 2025) is known as AMP7.
Combined sewer	A sewer designed to receive both wastewater and surface water from domestic and industrial sources to a treatment works in a single pipe.
Department for Environment, Food and Rural Affairs (Defra)	UK government department responsible for safeguarding the natural environment, food and farming industry, and the rural economy.
Environment Agency (EA)	UK government agency whose principal aim is to protect and enhance the environment in England and Wales.
Event Duration Monitoring (EDM)	Event duration monitoring (EDM) measures the frequency and duration of storm discharges to the environment from storm overflows.
PR24	<p>Every five years, water companies set out their plans for what they'll deliver and how much they'll charge customers. Their plans over the next five years should include how they will:</p> <ul style="list-style-type: none"> • Provide a safe and clean water supply • Provide efficient sewerage pumping and treatment services • Control leaks • Install meters • Maintain pipes and sewers • Maintain and improve environmental standards <p>This process is known as the price review, and the next one will be in 2024, when Ofwat will make its final decisions. We call this PR24.</p>
Sewage Treatment Works (STW)	A sewage treatment works receives and treats wastewater to a standard legally agreed with the Environment Agency, before it's released back into the environment.
Storm overflow discharges	Storm overflows are used to manage excess flows, which usually happen as a result of heavy rainfall. Excess flow that may otherwise have caused flooding is released through a designated outfall to a water course, land area or alternative drainage system.
Surface water sewer	A surface water sewer collects rainwater from domestic and commercial roofs, driveways, patios etc to a local watercourse or suitable surface water drainage system.

Sustainable Drainage systems (SuDS)	Drainage solutions that provide an alternative to the direct channelling of surface water through networks of pipes and sewers to nearby watercourses. SuDS aim to reduce surface water flooding, improve water quality, and enhance the amenity and biodiversity value of the environment. SuDS achieve this by lowering flow rates, increasing water storage capacity and reducing the transport of pollution to the water environment.
Water Industry National Environmental Programme (WINEP)	The framework under which Defra and the EA require environmental improvements to be delivered by water companies. Guidance is released by regulators, which water companies interpret for their geographical area, and resubmit the outputs back to regulators for endorsement.
EnvAct_IMP2	Actions/improvements to reduce storm overflow spills to protect the environment so that they have no local adverse ecological impact.
EnvAct_IMP3	Actions to reduce storm overflow spills to designated bathing waters to protect public health.
EnvAct_IMP4	Actions/improvements to reduce storm overflow spills to an average of 10 a year by 2050.
EnvAct_IMP5	Actions/improvements to reduce the aesthetic impact with the installation of screens.
EnvAct_INV4	Investigations to reduce storm overflow spills to protect the environment so that they have no local adverse ecological impact.
Emergency Overflow	An overflow at a wastewater pumping station which allows spillage of foul sewage to a watercourse or other waters in an emergency, in the event of mechanical or electrical failure of the pumping station, or due to failure of the downstream rising main (but specifically not from storm action).
WASC	Water and Sewerage Company
RNAG	Reasons for Not Achieving Good
SOAF	Storm Overflow Assessment Framework
SAC	Special Areas of Conservation
SPA	Special Protection Areas
RAMSAR	Land listed as a Wetland of International Importance under the Convention on Wetlands of International Importance, especially as Waterfowl Habitat.
UWWTR	Urban Waste Water Treatment Regulations

