



# Storm overflow action plan

A guide





# Introduction

This guide is designed to complement our Storm Overflow Action Plan (SOAP), which we first made available to our customers and the public in early 2024. It's in a spreadsheet format, with a template provided by the Department for Environment, Food and Rural Affairs (Defra).

Defra has requested the 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 SOAP is a working document, rather than a final plan, therefore the document has changed since our first publication and as our business plan covering the period from now to 2030 is still under discussion with our regulators, it will continue to evolve.

Subsequent business plans will also be subject to change and approval, and the SOAP 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 to the 2050 target for completion.

Discharges from our 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.

Our [River health report](#) describes how we plan to improve the health of rivers in the Thames catchment.

The information in this Storm Overflow Action Plan should be read in the context of our River Health Report.



Defra first 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 near designated bathing waters.
- 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 595 storm overflows. These include assessments of:

- 267 permitted and unpermitted combined sewer overflows.
- 232 overflows for storm discharging at sewage treatment works.
- 96 overflows 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:

- 520 storm overflows which discharge into inland water.
- 75 storm overflows which discharge into the transitional waters of the tidal Thames Estuary.

Note that the number of overall overflows in the SOAP spreadsheet we have published is greater than 595, due to a request by DEFRA to include details of changes from the original version submitted to Defra in 2023, which was based on 685 overflows and also includes:

- 79 storm overflows which have had their permit surrendered and can no longer operate.
- 11 assets that, through investigation, have been assessed as not being a storm overflow.

The schemes that we'll be delivering are varied and include a range of green and grey solutions. Our 25-year Storm Overflow Action Plan is continually evolving and has developed since the publication of the Drainage and Wastewater Management Plan (DWMP) but it still has a focus on natural solutions, with more 'green' nature-based solutions than ever before. As can be seen in this plan, we are proposing 8 wetland schemes and 188 surface water removal schemes, utilising sustainable urban drainage solutions (SUDS). Many of the plans for our overflows are also a combination of green and grey solutions, incorporating increased storage of storm water, SUDS, 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 and shows how we are 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).
- 108 schemes delivered during 2030 - 2035 (AMP8).
- A further 165 locations meeting targets during 2030 - 2035 (AMP9).
- 61 locations during 2035-2040 (AMP10).
- 118 locations during 2040 - 2045 (AMP11).
- 118 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 water, groundwater or a combination of both.
- Outcomes of any previous assessment of overflows, with identified issues and proposed solutions Proposed solutions.
- When improvements will be delivered, including interventions funded in the current Price Review 19 period (delivered by 2025) and 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 is based on the Environment Agency storm overflow permits We've answered 'N/A' for overflows which we don't have an environmental permit for yet.

## Details of receiving environment (columns L-AJ and BE to BG)

- Utilising DEFRA and Environment Agency guidance, each storm overflow was assessed to determine if it fell within these categories.

- Column N – SOAF (PR19) 'Environmental Impact' aligns with the latest output of our Storm Overflow Assessment Framework (SOAF) Investigations, submitted to the Environment Agency.
- Column AG – Bathing water status based on Environment Agency bathing water portal status.
- Column AH – We currently do not utilise pathogenic treatments for storm overflows.

## Details of spills (columns AK & AL and BV-CS)

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

## Proposed Solution where known (columns AM-AV)

- The proposed solutions that have been detailed here are a snapshot view of dynamic programmes as of September 2024 and are subject to change. This may be as a result of additional data, operational influences, investment decisions or anything else that may influence the definition of the best value solution or delivery timescale.

## PR24 WINEP Drivers (Columns AW to BB)

- Aligns with our latest (September 2024) view of the applicability of Environment Act 2021 drivers to each of our storm overflows.

## Delivery expectation and timeframe for storm overflow improvement schemes (BC-BD and BI-BU)

- This information indicates when we're planning for improvements to be delivered and the predicted change in spill frequency. As with the proposed solutions, this is subject to change.

## Already meeting applicable targets (BH)

- If a storm overflow already has a 10 year long term average annual spill count of less than 10, then this it is possible that it already meets SOAP targets, however we need to complete investigations to define the discharge frequency which would cause no ecological harm.

## Improvement progress (BO to BU and CU-CV)

- Progress on AMP7 (PR19) improvements under existing programmes. Although these solutions are expected to contribute toward the SODRP targets, they are not designed to meet them.
- Whilst we began setting up our Storm Overflows AMP8 programme, we have not started delivering improvements.
- We are not delivering Green Recovery schemes for Storm Overflows.

## Bathing Waters (BT & BU)

- Improvement according to the WINEP Storm Overflows Bathing Water drivers. For Storm Overflows, bathing waters will be improved with spill reductions.

## EDM Installed (CT)

- The presence of an Event Duration Monitor on our storm overflows, as per our annual return. All our Storm Overflows are currently monitored.

<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"> <li>• Provide a safe and clean water supply</li> <li>• Provide efficient sewerage pumping and treatment services</li> <li>• Control leaks</li> <li>• Install meters</li> <li>• Maintain pipes and sewers</li> <li>• Maintain and improve environmental standards</li> </ul> <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

