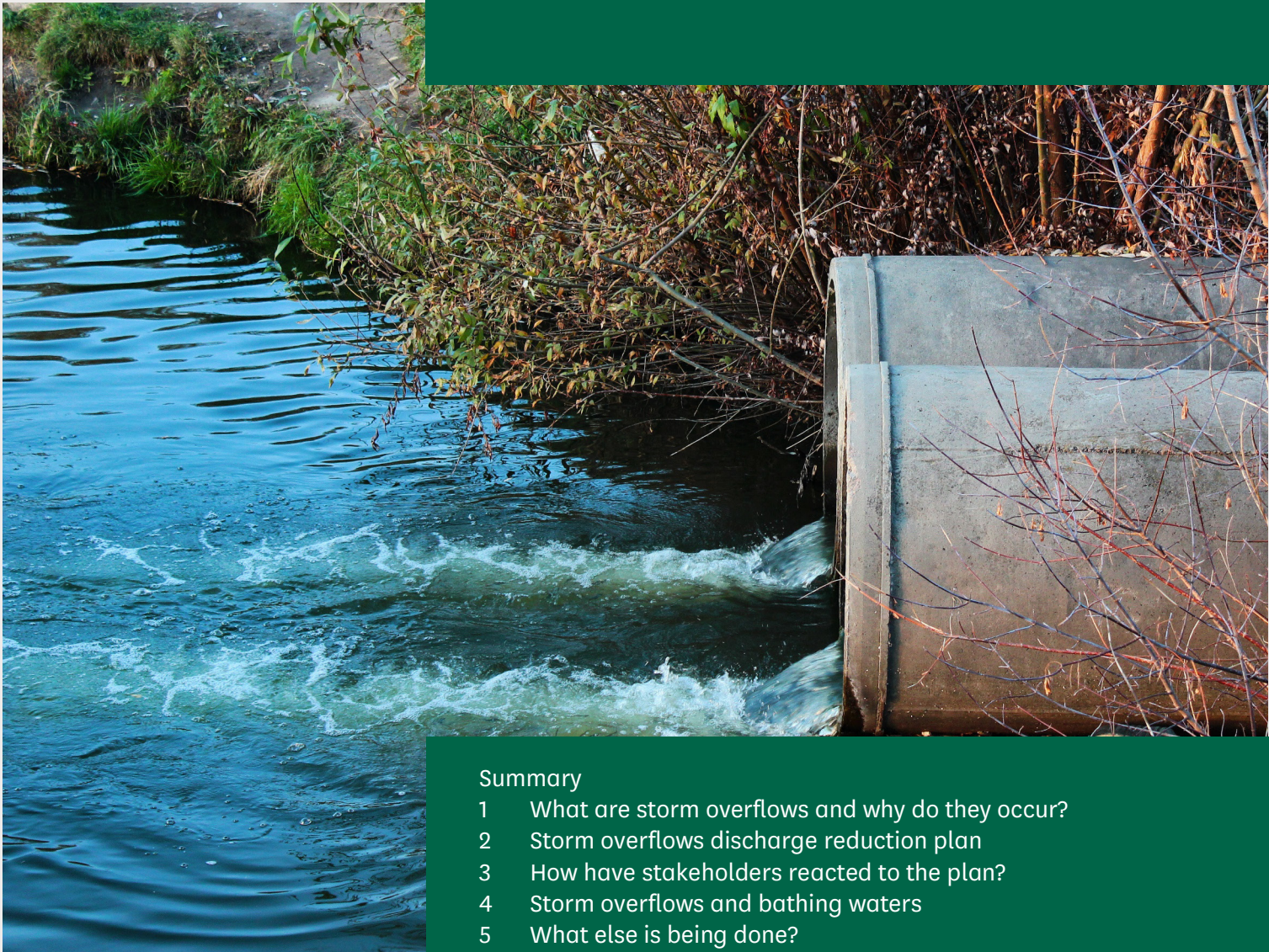


Research Briefing

6 October 2022

By Dominic Carver

Q&A: Storm overflows discharge reduction plan



Summary

- 1 What are storm overflows and why do they occur?
- 2 Storm overflows discharge reduction plan
- 3 How have stakeholders reacted to the plan?
- 4 Storm overflows and bathing waters
- 5 What else is being done?
- 6 Further reading

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Summary

In most of the UK, sewage from buildings is collected with water from roads, roofs and other hard surfaces. This wastewater infrastructure is referred to as a combined sewer network.

To prevent sewers from becoming overwhelmed when the system is unable to cope with a surge in volumes of water, combined sewer overflows (CSOs) or storm overflows are permitted. When in operation, storm overflows discharge raw untreated sewage (although significantly diluted) into waterways and the sea.

Water quality is a devolved matter. There are around 14,500 storm overflows in England. The Environment Agency's 2021 data shows that there were:

- 24,800 discharges into bathing waters with a total duration of 162,000 hours
- 28,700 discharges into shellfish waters with a total duration of just over 200,000 hours.

From 31 March 2022 to 12 May 2022, Defra ran a [consultation on the Government's Storm Overflow Discharge Reduction Plan](#). It outlined three headline targets in areas of environment, public health and reducing storm overflows:

1. Protecting the environment:

Headline target: Water companies shall only be permitted to discharge from a storm overflow where they can demonstrate that there is no local adverse ecological impact. This must be achieved for all storm overflow sites by 2050.

2. Protecting public health in designated bathing waters:

Headline Target: For storm overflows discharging into and near designated bathing waters, water companies must significantly reduce harmful pathogens by either applying disinfection, such as with ultraviolet radiation, or reduce the frequency of discharges to meet Environment Agency spill standards by 2035.

3. Ensuring storm overflows operate only in unusually heavy rainfall events

Headline Target: Storm overflows must not discharge above an average of 10 rainfall events per year by 2050.

On 26 August 2022, the Government published its [storm overflows reduction plan](#) as a legal requirement of the Environment Act 2021. The plan sets out actions for water companies, the Government and the public to take to help reduce the impact of storm overflow discharges.

Two of the headline targets set out in the plan are:

- by 2035, water companies will have to improve all storm overflows discharging into or near every designated bathing water; and improve 75% of overflows discharging into high priority nature sites
- by 2050, this will apply to all remaining storm overflows covered by our targets, regardless of location.

Chapter 2 of the plan sets out specific actions for Water Companies to take and largely focuses on the three headline targets that were set out in the consultation document.

Chapter 3 of the plan sets out actions the Government must take. This explains how legislative measures in the Environment Act, will enable the Government to measure water company performance.

Chapter 4 of the plan looks at actions everyone can take to help reduce the occurrence of storm overflows. This includes increasing the use of permeable surfaces and alternatives for drainage and avoiding the disposal of wet wipes, fats, oils and greases.

The Government has called the plan “the most significant investment and delivery programme ever undertaken by water companies to protect people and the environment”¹. Increased water company investment and the measures in the plan to address storm overflows were welcomed by the Chair of the Environmental Audit Committee, Phillip Dunne. However, the Rivers Trust said that it was “appalled” that the plan “has not taken into account the thousands of responses to the draft consultation” and criticised “the government’s lack of ambition and clarity for the sector”.² Water UK, the industry body representing the water sector, called the plan a “step forward” but called on the Government to do more to prevent housing developers adding to the burden on sewers.

¹ Defra, [Toughest targets ever introduced will crack down on sewage spills](#), 26 August 2022

² The Rivers Trust, [Storm Overflows Discharge Reduction Plan still too little, too late](#), 26 August 2022

1 What are storm overflows and why do they occur?

In the newest parts of the wastewater drainage system, sewage and surface water are collected separately. However, in the majority of the UK, sewage from buildings is collected with water from roads, roofs and other hard surfaces. This additional water is known as surface water or surface runoff. The wastewater infrastructure used to collect sewage and surface water is referred to as combined sewers.

To prevent sewers from becoming overwhelmed when the existing infrastructure is unable to cope with a surge in volumes of water, combined sewer overflows (CSOs) or storm overflows are permitted. When these release valves are in operation, raw untreated sewage (usually highly diluted), is temporarily discharged directly into waterways and the sea.

Surges in flow usually occur during wet weather due to the additional volumes of water passing through the sewer network. However, storm overflows can also be triggered by misuse of the sewage system. Wet wipes that are flushed into sewers can account for up to 90% of material causing sewer blockages.³ Fats, oils and greases from kitchens that enter sinks and drains can also accumulate in sewers and increase the risk of blockages within the system.

Are they legal?

Yes, under certain conditions.

Water quality in the UK is a devolved matter. Intermittent discharges from sewer overflows and wastewater treatment works (WWTWs) in England are regulated by the Environment Agency, which issues environmental permits for this activity, under the [Environmental Permitting \(England and Wales\) Regulations 2016](#). These updated and consolidated the previous 2010 regulations. [Schedule 21](#) of the regulations sets out the definition of water discharge activities and how the regulations are to be applied.

In 2018, the Environment Agency published specific guidance on water company [permits for storm overflows and emergency overflows](#).

The guidance contained information on a range of scenarios when a permit may be requested and whether or not it is likely to be issued. The situations when a permit to discharge may be requested are listed as follows:

³ Environment Agency, [Combined Sewer Overflows Explained](#), 2 July 2020

- Permits for existing unpermitted storm overflows
- Permits for improvement or alteration of existing permitted storm overflows
- Permits for new storm overflows as part of rationalisation or overall improvement scheme
- Permits to limit flows to treatment
- Permits for new storm overflows to stop flooding
- Permits for existing emergency overflows to operate during storms
- Permits to relieve surcharge due to groundwater infiltration
- Permits for new emergency overflows.⁴

The guidance also stipulates the monitoring, maintenance, design specification and water quality standards for storm overflows. These requirements may vary depending on the area into which the storm overflow discharges. Areas with high amenity value or designated bathing or shellfish waters have stricter requirements.

Full details of the factors considered by the Environment Agency in each case can be found in the [environmental permits for storm overflows guidance](#).

What harm can they cause?

The raw sewage released from storm overflows can contain high levels of pathogens, such as viruses and bacteria which pose a risk to human health. In August 2022, [swimmers were warned to stay away from beaches](#) after heavy rain caused storm overflow discharges at numerous locations around the country.

Raw sewage may also contain organic pollutants (poisonous chemical substances), microplastics, pharmaceuticals, nutrients, and heavy metals, as well as litter and waste that is flushed down toilets⁵. This can alter water chemistry and result in ecological harm and environmental damage.

What are the benefits of storm overflows?

Permitted CSOs can help prevent potential sewer flooding which can affect homes, properties and roads further up the drainage network.

An [explainer on storm overflows](#) from Ofwat contains further information and the [Commons Library briefing on sewer flooding](#) provides information on why

⁴ Environment Agency, [Water companies: environmental permits for storm overflows and emergency overflows](#), 13 September 2018

⁵ Defra, [Storm overflows discharge reduction plan](#), 26 August 2022

sewer flooding happens, responsibilities for addressing the problem and information on possible compensation.

How prevalent are storm overflows?

There are around 14,500 storm overflows in England. Event Duration Monitors (EDMs) on storm overflows record the number of times there has been a discharge of storm sewage and for how long each discharge was for. This system started in 2016 with relatively a small number of individual storm overflows focussed on more sensitive areas such as bathing waters. Since then, the coverage has increased in each year and reached 89% of all overflows in 2021, up from around 57% in 2019 and 83% in 2020. All overflows in England are due to have an EDM fitted by the end of 2023.

The Rivers Trust has produced [an interactive map of the 2021 data](#) which allows users to select data for individual constituencies, local authorities or catchment areas and look at details of discharges for individual overflows.

The increase in EDM coverage over time means the latest data give a more accurate reflection of the total extent of sewage discharge from the storm overflow system and how it varies across the country. However, it also means that the EDM data do not give a reliable reflection of trends over time in the total number or duration of discharges or ‘spills’. An increase in the number or duration of spills could be attributed to increased EDM coverage.

The following table shows trends in the EDM data. It shows the growth in the number of overflows with spill data and the resulting increase in the number and duration of spills recorded. The average number of spills per recording overflow and average duration of spills both increased up to 2019 before falling in 2020 and 2021. This may reflect differences in the newly added overflows with EDMs in those years. However, the total number of spills recorded and their total duration both fell in 2021 when the number of EDMs increased.

Storm overflows in England: EDM data trends

	2016	2017	2018	2019	2020	2021
Storm overflows with spill data	862	2,515	6,182	8,276	12,092	12,393
Number of spills recorded	12,637	33,159	146,930	292,864	403,375	372,533
Total duration (hours)	100,533	170,269	898,784	2,489,167	3,101,150	2,667,542
Average number of spills per recording overflow	14.7	13.2	23.8	35.4	32.6	29.4
Average duration of spill (hours)	8.0	5.1	6.1	8.5	8.1	7.4

Source: Environment Agency, [Storm overflow spill data released today shows no room for complacency](#) (31 March 2022)

While 89% of storm overflows had EDMs in 2021, many of those EDMs were not working all the time. This was often due to data recording/transmission or general communication issues. Around 20% were operating less than 90% of the time and 4% were operating less than 50% of the time and 2% sent no data at all during 2021.⁶

The next table breaks down this headline data by water company. There is clearly a large difference in the number of storm overflows, so comparing totals by company is not especially meaningful. While most companies had operational EDMs for well over 90% of their overflows, there were some exceptions; Anglian Water had them for 54% of their overflows, South West Water 79% and Wessex Water 81%.

	Storm overflows				Spill data from operational EDMs			
	Total	With EDMs	% with EDMs	EDMs with spill data	Total number of spills	Total Duration (hours)	Average number per overflow ^(a)	Average duration per spill (hours)
Anglian Water	1,552	842	54%	834	21,351	194,594	26	9.1
Dwr Cymru Welsh Water (in England)	124	123	99%	121	3,489	16,599	29	4.8
Northumbrian Water	1,567	1,542	98%	1,440	36,483	220,560	25	6.0
Severn Trent Water	2,658	2,437	92%	2,412	59,662	461,119	25	7.7
South West Water	1,391	1,102	79%	1,093	42,484	351,785	39	8.3
Southern Water	978	963	98%	943	19,077	160,984	20	8.4
Thames Water	465	465	100%	461	14,713	163,090	32	11.1
United Utilities	2,192	2,006	92%	1,954	81,588	540,753	42	6.6
Wessex Water	1,297	1,049	81%	1,048	23,524	151,264	22	6.4
Yorkshire Water	2,246	2,178	97%	2,087	69,579	405,328	34	5.8
Total	14,470	12,707	89%	12,393	371,950	2,666,076	29	7.4

(a) Only includes overflows with EDMS installed and working

Source: Environment Agency, [Event Duration Monitoring - Storm Overflows - Annual Returns - 2021](#) (Summary data)

United Utilities had the highest number of spills per overflow in 2021 with 42. This was more than double the rate for Southern Water. Recorded spills were longest, on average, in the Thames Water region at just over 11 hours per spill compared to just under five hours per spill in the Dwr Cymru region and just under six hours per spill in the Yorkshire Water area.

The Environment Agency EDM dataset includes details of overflows that discharge into bathing and shellfish waters.⁷ The 2021 data shows there were:

⁶ Environment Agency, [Event Duration Monitoring - Storm Overflows - Annual Returns - 2021](#) (Summary data)

⁷ This only covers storm overflows with a bathing water or shellfish water requirement.

- 24,800 discharges into bathing waters with a total duration of 162,000 hours
- 28,700 discharges into shellfish waters with a total duration of just over 200,000 hours.⁸

Water companies automatically notify Surfers Against Sewage when a combined sewage overflow discharges into beaches around the coast of Great Britain. Surfers Against Sewage use this to issue alerts as part of their [Safer Seas & Rivers Service](#). They also publish a [live map](#) of alerts.

⁸ Environment Agency, [Event Duration Monitoring - Storm Overflows - Annual Returns - 2021](#) (All water and sewerage companies)

2

Storm overflows discharge reduction plan

On 26 August 2022, the Government published its [Storm overflows discharge reduction plan](#) as a legal requirement under the Environment Act 2021. The following section outlines the main elements in the plan and provides answers to some frequently asked questions.

Was the plan consulted on?

Yes. From 31 March 2022 to 12 May 2022, Defra ran a [consultation on the Government's Storm Overflow Discharge Reduction Plan](#). It outlined three headline targets in areas of environment, public health and reducing storm overflows:

1. Protecting the environment:

Headline target: Water companies shall only be permitted to discharge from a storm overflow where they can demonstrate that there is no local adverse ecological impact. This must be achieved for all storm overflow sites by 2050.

2. Protecting public health in designated bathing waters:

Headline Target: For storm overflows discharging into and near designated bathing waters, water companies must significantly reduce harmful pathogens by either applying disinfection, such as with ultraviolet radiation, or reduce the frequency of discharges to meet Environment Agency spill standards by 2035.

3. Ensuring storm overflows operate only in unusually heavy rainfall events

Headline Target: Storm overflows must not discharge above an average of 10 rainfall events per year by 2050.⁹

The consultation received 21,831 responses, of which 59% felt that the targets set out in the consultation did not address the key issues caused by storm overflows, while 46% said they would pay more in their water bills specifically to reduce the impact of sewage discharges.¹⁰

The [Government response to the consultation](#) was published on 26 August 2022, alongside the plan.

⁹ Defra, [Consultation on the Government's Storm Overflow Discharge Reduction Plan](#), 31 Mar 2022

¹⁰ Defra, [Government response to the storm overflows discharge reduction plan consultation](#), 26 August 2022

What is in the plan?

The [storm overflows discharge reduction plan](#) was published on 26 August and sets policy for England only. The Government provided an overview of the plan:

Water companies will have to achieve targets set out in the plan:

- by 2035, water companies will have to improve all storm overflows discharging into or near every designated bathing water; and improve 75% of overflows discharging to high priority nature sites
- by 2050, this will apply to all remaining storm overflows covered by our targets, regardless of location

Overflows that are causing the most harm will be addressed first to make the biggest difference as quickly as possible, and water companies will be expected to consider nature-based solutions in their planning.

The plan frontloads action in particularly important and sensitive areas including designated bathing waters and high priority ecological sites such as Sites of Special Scientific Interest (SSSIs), Special Areas of Conservation (SAC) and chalk streams.

The plan sets out our wider expectations for the water industry, to ensure their infrastructure keeps pace with increasing external pressures, such as urban growth and climate change. Water companies are expected to prioritise nature-based solutions, carbon reduction and biodiversity net gain in their planning.

In addition, the plan includes a report on the feasibility of eliminating discharges from storm overflows.¹¹

Chapter 2 of the plan sets out actions for water companies and largely focuses on the three headline targets that were set out in the consultation document. In some cases, the wording has been slightly changed and in the case of the target on public health additional information has been added on how this target should be achieved:

1. Water companies will only be permitted to discharge from a storm overflow where they can demonstrate that there is no local adverse ecological impact.
2. Water companies must significantly reduce harmful pathogens from storm overflows discharging into and near designated bathing waters, by either: applying disinfection; or reducing the frequency of discharges to meet Environment Agency spill standards by 2035.
3. Storm overflows will not be permitted to discharge above an average of 10 rainfall events per year by 2050.¹²

¹¹ Defra, [Storm overflows discharge reduction plan](#), 26 August 2022

¹² Defra, [Storm overflows discharge reduction plan](#), 26 August 2022

Chapter 3 outlines actions for Government. This includes legislation to improve water company transparency through increased monitoring of storm overflows and improvements to the management of rainwater, as well as other actions:

- Bring forward secondary legislation to implement Section 81 of the Environment Act in 2023.
- Bring forward secondary legislation to implement section 82 of the Environment Act in 2023.
- Publish the review and decision regarding implementation of Schedule 3 to the Flood and Water Management Act 2010 in Autumn 2022.
- The Government will continue to work with water companies and relevant stakeholders on implementing the findings of the Storm Overflows Taskforce to better manage rainwater.
- The Government will continue to work with stakeholders, including the Environment Agency and local authorities, to deliver the Surface Water Management Action Plan, and will have delivered over 60% by the end of 2022.
- The Government is reviewing the Bathing Water Regulations 2013. We will consult on policy options in 2023 and aim to complete the review in 2024.
- The Government will revise its existing guidance on applying for new bathing water designations by February 2023.
- Improve transparency of Bathing Water quality.
- The Government is prioritising action to improve the water quality of the largest shellfish waters in England by 2030.¹³

Further details of the Government's legislative actions are set out in Chapter 3 and Annex 3 of the plan.

Chapter 4 of the plan looks at actions everyone can take to help reduce the occurrence of storm overflows. This includes increasing the use of permeable surfaces and alternatives for drainage and avoiding the misuse of drains by not putting things like wet wipes or fats oils and greases down them. These measures can alleviate pressure on the drainage network by helping prevent blockages and reducing the volume of water entering the system.

The annexes contain additional details of elements of the plan, including specific commitments by different water companies, whilst Annex 5 (page 37) provides a report on the feasibility of eliminating discharges from storm overflows.

¹³ Defra, [Storm overflows discharge reduction plan](#), 26 August 2022

How will the Government measure improvement?

Chapter 3 of the plan explains how legislative measures in the Environment Act 2021 will enable the Government to measure water company performance:

Under section 82 of the Environment Act 2021, water companies must monitor the water quality impact of their assets that discharge sewage, including storm overflows and continuous discharges from wastewater treatment works. This will provide continuous data and will significantly increase our understanding of the water quality of our rivers.

This information will allow us to measure water companies' progress to achieve the targets detailed in this Plan and other objectives. This duty shall apply to inland watercourses.

Defra and the Environment Agency will provide joint technical guidance to water companies on implementation of this duty by Autumn 2022.¹⁴

The plan contains further details implementing Section 81 of the Environment Act which relates to monitoring storm overflow operations:

There are event duration monitors on almost 90% of the sewerage network. By the end of 2023, there will be 100% coverage. This will provide a complete picture of when, and for how long, each storm overflow operates. The Environment Act 2021 introduced new requirements for water companies to publish this information annually, and for the Environment Agency to publish an annual summary report for all the water companies in England. All water companies must provide data about the frequency and duration of storm overflow discharges for all overflows in near real time and make this available to the public no later than 2025 (by the start of Price Review 24).¹⁵

How would increased monitoring reduce storm overflows?

Chapter 2 of the [Storm overflows discharge reduction plan](#) sets out how increased monitoring will help reduce storm overflow discharges:

We have strengthened the monitoring requirements on water companies to ensure we have a comprehensive picture of the use and impact of storm overflows. The new duties in the Environment Act 2021 (Annex 3) will give us and regulators the tools we need to hold water companies to account and take enforcement action where water companies are not meeting their legal obligations.¹⁶

On 26 August, the Chair of the Environmental Audit Committee, Phillip Dunne, issued a statement which called for the Environment Agency to [actively assess storm overflow data](#) and take firm action where necessary:

¹⁴ Defra, [Storm overflows discharge reduction plan](#), 26 August 2022, p 22

¹⁵ Defra, [Storm overflows discharge reduction plan](#), 26 August 2022

¹⁶ Defra, [Storm overflows discharge reduction plan](#), 26 August 2022, p 10

The announcement that 100% of overflows will have monitors installed by next year is also good news. It is nevertheless crucial that the data provided by these devices is actively assessed by the Environment Agency and Ofwat, and that firm action is taken immediately if the data demonstrates that permit conditions have been breached.¹⁷

Will water bills go up as a result of the plan?

Yes, although this is likely to vary as the investment required by individual water companies will be different. Chapter 2 of the [Storm overflows discharge reduction plan](#) provides further details of the likely financial impact of achieving the specified targets. It sets out the projected investment costs and subsequent impact on customers but also states that Ofwat will continue to ensure that customers do not pay more than they should:

The cost of delivering the storm overflow targets does not fall evenly across England. The number of storm overflows, and the modelled cost of improvements, varies regionally. [...] the scale of the modelled improvements required fall unevenly through the country. The three most impacted companies (Yorkshire Water, United Utilities and Wessex Water) account for over three quarters of the investment required relative to their consumer base.

Ofwat will also continue to carefully scrutinise the efficiency of all investments to ensure that customers do not have to pay more than they should have to.¹⁸

Further details about how much bills are expected to rise on average and over what time period is also set out in the plan:

Based on the modelled costs provided in the Impact Assessment, it is anticipated that annual water bills averaged over the whole period to 2050 would eventually rise by £42 p.a. compared to current prices. There will be no bill impacts until 2025. The modelled bill increases will start in 2025 and would average £12 between 2025 and 2030. These figures are averages across England. We expect there to be significant variations across years and water company regions, with bill impacts for water company regions with the largest overflow programmes up to 3 times the national average and for those with the smallest programmes lower than a seventh of the national average. This will be considered further when the targets are reviewed in 2027.

The government will continue to monitor water affordability and take further action if needed and will consult on a new affordability scheme to help less well-off households. There is uncertainty about future changes in water bills. Actual costs may be lower than modelled where companies are able to find lower cost solutions locally, and this will be considered further in the 2027 review. The review will also consider how water companies' affordability measures are continuing to support households that are unable to afford their water bills, and to ensure bill increases do not have disproportionate impacts.

Ofwat, the economic regulator of the water sector, will assess the water company business plans to ensure the targets are delivered as efficiently as

¹⁷ Environmental Audit Committee, [Statement: Philip Dunne MP reacts to Government announcement on river discharge investment](#), 26 August 2022

¹⁸ Defra, [Storm overflows discharge reduction plan](#), 26 August 2022, pp 15-16

possible, to provide best value to customers and the environment, challenging companies to keep bill increases manageable for consumers.¹⁹

Is the plan subject to change?

Yes. The Government has committed to reviewing the plan in 2027. The Government has stated that it is waiting until this date so that it can align with Ofwat's price review process²⁰ and water company planning cycles:

...the Government is committing to review the targets in the plan in 2027, ahead of the 2029-2034 water company planning cycle (PR29) once new information, including from companies' business plans, is available. We will be able to establish if companies can go further and faster to achieve the storm overflow targets in this Plan without having a disproportionate impact on consumers bills. This will also feed into broader reporting mechanisms under the Environment Act 2021, such as through the Environmental Improvement Plan, to monitor and assess how this and other actions are contributing to the broader recovery of river and water habitats.²¹

Further information on the price review process and water company regulation is available in the Commons Library briefing [Economic regulation of the water industry in England and Wales](#) (June 2020).

Who else is responsible for reducing storm overflows?

While much of the focus of the plan is on water companies, the Government has also set out actions that it and other stakeholders can take to reduce the strain on the sewer system. This includes improved rainwater management which the plan states "is key to achieving a reduction in sewage discharges from storm overflows, reducing flood risk and improving water scarcity to ensure a healthy environment".²²

To help improve surface water management, the Government has stated in the plan that it will "publish the review and decision regarding implementation of Schedule 3 to the Flood and Water Management Act 2010 in Autumn 2022" which, if implemented, would:

- Introduce standards for new sustainable drainage systems (SuDS);
- Introduce an 'approving body', and;

¹⁹ Defra, [Storm overflows discharge reduction plan](#), 26 August 2022

²⁰ The prices that water companies charge customers in bills is controlled by Ofwat through a 5-yearly process called the [price review](#). During the price review Ofwat sets wholesale price limits for each water company alongside performance targets, such as for leakage reduction, reducing pollution incidents and lowering personal water consumption. When setting company prices, Ofwat must balance the interests of the customer for lower prices with the need to make sure the water company can finance its operations and meet environmental responsibilities.

²¹ Defra, [Storm overflows discharge reduction plan](#), 26 August 2022

²² Defra, [Storm overflows discharge reduction plan](#), 26 August 2022

- Remove the automatic right to connect to the public sewer system, to prevent new developments adding more surface water to the combined sewer network when it rains.²³

The plan also sets out recommendations made by the [Storm Overflows Task Force](#) (see also section 5 of this briefing) based on a review of legislation on rainwater drainage. The Government “will assess the feasibility, effectiveness, and sustainability of these recommendations” which include: giving water companies the right to alter drainage systems on private property to reduce impermeable areas connected to the combined sewer network; and giving water companies the right to discharge rainwater to water courses.

Another area which the Government will consider is the role of highway drainage as a rainwater drainage system. The plan states that:

Planning Practice Guidance sets out a hierarchy of drainage options to discharge surface runoff, with discharge of surface water to highway drainage preferable to discharge to combined sewers. In practice however, highway authorities often refuse to allow connection to their systems and there is no legal obligation for them to do so. This forces developers to connect to the combined sewer.²⁴

Finally, the plan outlines measures that the public and users of the drainage network can take to help reduce strain on the drainage network. This includes using permeable surfaces and alternatives for drainage and not disposing of fats, oils, greases, wet wipes and nappies down sinks and toilets, which can lead to blockages and reduce the network capacity.

²³ Defra, [Storm overflows discharge reduction plan](#), 26 August 2022

²⁴ Defra, [Storm overflows discharge reduction plan](#), 26 August 2022

3

How have stakeholders reacted to the plan?

A [Government press release](#), published on 26 August 2022, called the plan “the most significant investment and delivery programme ever undertaken by water companies to protect people and the environment”²⁵.

Chair of the Environmental Audit Committee (EAC), Phillip Dunne, [issued a statement](#) on the day the plan was published. He welcomed the plan and increased water company investment:

After two and a half years campaigning on this issue, and a landmark committee inquiry, it is welcome news today to receive details of this sewage reduction plan which aims to leave the country's rivers and beaches cleaner and safer.

In its Water Quality in Rivers report in January, EAC called for a programme of long-term investment to limit the amount of surface rainwater entering the sewage system, which forces the dumping of untreated sewage into waterways.

The headline £56bn of capital investment in water treatment over the next 25 years will more than double what has been spent annually since privatisation of the water sector.

I hope this will spell an end to the poisoning of river ecosystems and the harm done to bathers and other river users. It is right to focus on fixing the worst polluted sites first, as well as areas of special nature conservation such as chalk streams.²⁶

The Rivers Trust was more critical of the plan and published a statement voicing strong concerns about its lack of ambition or consideration of the consultation responses:

We are appalled to see that Defra's Storm Overflows Discharge Reduction Plan has not taken into account the thousands of responses to the draft consultation which called for much more ambitious targets, and still reflects far too little, too late. Far from revolutionising the sewer system, as the plan claims, this plan aims to claw its way back to what should have already been 'business as usual' by 2050 – with sewer overflows operating only during exceptional rainfall events by that time.

²⁵ Defra, [Toughest targets ever introduced will crack down on sewage spills](#), 26 August 2022

²⁶ EAC, [Statement: Philip Dunne MP reacts to Government announcement on river discharge investment](#), 26 August 2022

This should be the current situation, and yet we are living with 2.6 million hours of overflows in England. Sadly, the fact that our water and sewage sector has been so poorly regulated over the last couple of decades is only now surpassed by the government's lack of ambition and clarity for the sector.²⁷

Water UK, the industry body representing the water sector, called the plan a "step forward" but called on the Government to do more to prevent housing developers adding to the burden on sewers:

This plan represents a step forward in the urgent collective mission to tackle our reliance on storm overflows and builds on the spending from water companies that's already underway. Companies agree there is an urgent need to do more and are ready to invest to achieve these ambitious plans.

Additional action from government, regulators and other sectors could bring greater environmental benefits. Government should close the loophole that allows housing developers the right to overload sewers and also take action on the flushed wet wipes that create the fatbergs that cause so many blockages. A greater focus on keeping rainwater out of sewers, via measures such as sustainable drainage, would also tackle the source of the problem and help bring about the transformation we all want to see.²⁸

Parliamentary debate

On Tuesday 6 September 2022, [Sewage Pollution](#) was the subject of an urgent question tabled by Caroline Lucas (Green Party). During the debate she highlighted the concern from her constituents over the issue and questioned the urgency in the plan, asking the Government to strengthen to it:

Following the news over the summer that raw sewage was being pumped into our waterways and along our beautiful beaches, I have received so many messages from constituents who are horrified that water companies are polluting in such a revolting way.

Where is the urgency from Ministers? We have a so-called plan that allows water companies to continue polluting until 2035 in areas of significant importance to human and ecological health and until 2050 elsewhere, which means sanctioning nearly 30 more years of pollution. Is that genuinely what the Secretary of State considers to be an urgent response? Will he strengthen it to a 90% reduction in storm overflows by 2030 at the latest?²⁹

Labour MP Jim McMahon called the plan a green light for water companies to continue discharging raw sewage:

The Government's plan is not worth the paper it is written on. It is business as usual, giving water bosses the green light to carry out another 4.8 million discharges through to 2035.³⁰

²⁷ The Rivers Trust, [Storm Overflows Discharge Reduction Plan still too little, too late](#), 26 August 2022

²⁸ Water UK, [Water UK response to Government's Storm Overflows Discharge Reduction Plan](#), 26 August 2022

²⁹ [HC Deb 6 September 2022 c112](#)

³⁰ [HC Deb 6 September 2022 c114](#)

The then Environment Secretary George Eustice highlighted the improvements that had already taken place due to measures in the Environment Act 2021:

This is the first Government to set a clear requirement for water companies to reduce the harm caused by sewage discharges: we have set that in law through the Environment Act 2021. We are taking action now on a scale never seen before. Water companies are investing £3.1 billion now to deliver 800 storm overflow improvements across England by 2025. This will deliver an average 25% reduction in discharges by 2025.

We have also increased monitoring. In 2016, only 5% of storm overflows were monitored. Following the action of this Government, almost 90% are now monitored, and by next year 100% of all storm overflows will be required to have monitors fitted. This new information has allowed our regulators to take action against water companies.³¹

A full transcript of the debate can be viewed [here](#).

Following the urgent question, sewage pollution was also debated in the House of Lords on Wednesday 7 September. A full transcript of the House of Lords Debate can be viewed [here](#).

A Westminster Hall Debate on sewage discharge is scheduled to take place on 12 October 2022. The debate will be opened by Huw Merriman MP.

³¹ [HC Deb 6 September 2022 c111](#)

4

Storm overflows and bathing waters

Much of the focus of the plan is on bathing waters. These are sensitive areas as they are frequently used by the public and storm overflows here may present a greater public health risk.

[Guidance from Defra](#) defines bathing waters as a designated “coastal or inland water that attracts a large number of bathers in relation to any infrastructure or facilities that are provided, or other measures that are taken, to promote bathing at the site”.³²

Bathing waters are designated through an application process that requires evidence to be submitted. The application is usually carried out by the local authority, however anyone is eligible to apply. The guidance states that if an area becomes a designated bathing water “the Environment Agency will develop a bathing water profile and put plans in place to monitor and protect the bathing water. By law, the local council must display information about water quality and pollution sources at designated bathing waters during the bathing season (15 May to 30 September)”.³³

The [current list of designated bathing waters in England](#) by local authority area is published by Defra. This was last updated in May 2022.

How are bathing waters monitored?

The Environment Agency (EA) is responsible for monitoring bathing water quality. This involves taking twenty samples at designated sites across the bathing season to test for the presence of bacteria found in sewage known as faecal indicator organisms or FIOs. Other sources of FIOs include agricultural runoff, wildlife, birds and road drainage.

The [Bathing Water Regulations 2013](#) set out the standards used for levels of FIOs and bathing water quality classifications, which are based on research by the World Health Organisation, however the sampling procedure has remained unchanged for over 25 years. Annual classifications are based on the last four years of data. Further details on bathing water quality are provided on the Government’s [Data Services Platform](#):

The [Environment Agency](#) takes up to twenty water samples at each of England’s [designated bathing waters](#) during the bathing water season between May and September each year. A classification for each bathing

³² Defra, [Bathing waters: apply for designation or de-designation](#), updated 26 February 2021

³³ Defra, [Bathing waters: apply for designation or de-designation](#), updated 26 February 2021

water is calculated annually based on samples from the previous four years. These classifications are:

- [Excellent](#) – the highest, cleanest water quality
- [Good](#) – generally good water quality
- [Sufficient](#) – the water meets the minimum standard
- [Poor](#) – the water has not met the minimum standard. Work to improve quality at Poor sites are detailed in the site’s profile.

A sample tells us the quality of the water at that specific time, but water can change even over the course of one day. In each sample we test for bacteria that indicate whether there is [faecal matter](#) in the water. These bacteria are known as faecal indicator organisms or FIOs and the specific ones that we test for are:

- [Escherichia coli](#) or E. coli (EC)
- [Intestinal enterococci](#) (IE)

When more of these FIOs are present in a bathing water they can indicate greater risks to a bathers' health. The standards we use for levels of FIOs are specified in the [Bathing Water Regulations](#) and are based on World Health Organisation research which recorded the frequency of stomach upsets in people bathing in differing water quality.

The annual classification uses the samples taken over four years to build an assessment of typical water quality and is a good way to compare bathing water locations.³⁴

The Government’s Data Services Platform has a page called [Swimfo: Find a bathing water](#) which allows users to look at the details of specific bathing water locations or download data from multiple sites using the [Bathing water data](#) page.

Environment Agency funding

In light of recent developments on storm overflows, questions have been raised over whether the Environment Agency has sufficient resources to hold the water companies and other polluters to account for breaches of environmental regulations. On 29 August 2022, The Independent reported that Environment Agency funding had been cut by 50% over the past decade and suggested that the regulator “has struggled to improve air quality and biodiversity, tackle water pollution, and better regulate farms and sewage works as a result of the cuts”.³⁵

³⁴ Defra, [Bathing Water Quality: Help](#), 2021

³⁵ The Independent, [Environment Agency funding cut by 50% over past decade as sewage spills rise. analysis shows](#), 29 August 2022

On 8 September, Liz Twist (Lab) tabled a [parliamentary question](#) asking the Government about the potential impact of the funding cuts on the control of sewage discharges into the environment. The government response issued on 26 September 2022 stated that:

Defra and its agencies received an additional £4.3 billion in the last Spending Review much of which is invested, through the Environment Agency, in protecting our environment. This included new funding for the Environment Agency to undertake 500 additional water company inspections over the spending review period. This is in addition to their routine regulation of water companies, funded through annual subsistence charges. We are also introducing new legal requirements to increase the monitoring of sewage discharges.³⁶

During a [debate on Sewage Pollution](#) which took place on Tuesday 6 September 2022, the then Secretary of State for Environment, Food and Rural Affairs, George Eustice stated that the Government was “bringing a record number of investigations and prosecutions against water companies for potential breaches of their permit conditions”. He also highlighted that regulators were not fully aware of past breaches of the permitting conditions:

The real challenge is that the Environment Agency was not fully aware that these breaches were occurring. That is why, as I said earlier, the Office for Environmental Protection is investigating why the Environment Agency was not aware that permits it had granted were, it appeared, not being followed in all cases. None the less, the Environment Agency has all the powers it needs to prosecute, to bring fines and to require immediate changes.³⁷

The issue of Environment Agency funding was also raised in a Westminster Hall debate on [water companies and sewage discharges](#) on Monday 15 November 2021. Further details of this debate are outlined in section 5 of this briefing.

³⁶ [UIN 901333](#), 26 September 2022

³⁷ Sewage Pollution Volume 719, [col 126](#), 6 September 2022

5

What else is being done?

Storm overflows taskforce

The Storm Overflows Taskforce was established in August 2020 with the aim of recommending “actions to achieve the long-term aim of eliminating harm from storm overflows in England”.³⁸ Its goals are to develop:

- proposals to significantly reduce the frequency and impact of sewage discharges from storm overflows
- short-term actions to accelerate progress to reduce the harm caused by storm overflows.³⁹

The taskforce is chaired by Defra and has nine permanent members, made up of representatives from the water industry, environmental non-governmental organisations, government representatives and regulators.

In November 2021, an independent research project commissioned by the taskforce was published. The [Storm overflows evidence project](#) assesses the options and costs and benefits for reducing storm sewage discharges in England.

Office for Environmental Protection investigation

The [Office for Environmental Protection](#) (OEP) is a new public body created in November 2021 under the Environment Act 2021, to protect and improve the environment by holding government and other public authorities to account.

On 27 June 2022, the OEP published an article announcing that it was launching an “investigation into the roles of Ofwat, the Environment Agency and the Defra Secretary of State in the regulation of combined sewer overflows in England”.⁴⁰

The aims of the investigation are to determine whether these authorities have failed to comply with their respective duties in relation to the regulation, including the monitoring and enforcement, of water companies’ own duties to manage sewage. In doing so, we will seek to clarify the respective duties.

³⁸ Gov.uk, [Storm Overflows Taskforce, accessed 6 October 2022](#)

³⁹ Gov.uk, [Storm Overflows Taskforce, accessed 6 October 2022](#)

⁴⁰ OEP, [OEP launches investigation into the regulation of combined sewer overflows \(CSOs\)](#), 27 June 2022

Further, if there are found to be failures, our objective will be to improve regulation, leading to long term improvement in water quality.⁴¹

During a speech to on 7 September 2022, Chair of the OEP, Dame Glenys Stacey, gave a [brief update on the investigation](#):

While I am limited to what I can say about our on-going investigation into CSOs, I feel I can use it to illustrate some key features of our approach.

Our intent will always be to get to the root cause of an issue, the main source of concerns, and seek a resolution, an outcome that protects, restores or enhances the environment, as needs be. Launching an investigation does not necessarily mean we will punish or prosecute. Our investigation into CSOs may indicate there has been non-compliance with the law and we could be looking at the potential for enforcement action. Or we may find the issue is with the law itself. One of our roles is to monitor the effectiveness of environmental law, and if the law is not delivering as intended we can suggest improvements.

We don't know yet. The work is on-going. But the point is we will use the full range of our powers and influence in order reach a resolution that protects, restores or enhances the environment. We have enforcement powers and are comfortable using them – but we may find that on many occasions it is enough for us to highlight an issue, signal our interest and hold a mirror up to an agency or government, to reflect what is really happening, point to accountability and see changes made.

And to give a brief update on the investigation itself, we requested initial information from each of the agencies. We have received responses from each, and work to analyse and consider them is at an advanced stage, with next steps now being considered. We will give more substantial updates at appropriate points as things progress.⁴²

Petitions and campaigns

E-petition 582336, [Ban Water Companies discharging raw sewage into water courses](#), received 111,434 signatures before closing on 12 October 2021. The petition called for Government to:

Ensure Water companies treat the sewage they are responsible for. Not discharge it into rivers and water courses. After all what goes into the ocean comes back as the fish we eat.

This should be illegal!

The petition was [debated in Westminster Hall](#) on Monday 15 November 2021. Opening the debate, Tonia Antoniazzi (Lab) called for increased monitoring and reporting to help address the issue of storm overflows:

To clean up our waterways, we need a fully funded and resourced action plan. We need targets for water companies and serious consequences when they

⁴¹ OEP, [OEP launches investigation into the regulation of combined sewer overflows \(CSOs\)](#), 27 June 2022

⁴² OEP, [Priorities for the OEP – delivering the first strategy and setting out the enforcement policy](#), 7 September 2022

break the rules. One way of doing that is to increase the environmental reporting requirement for water companies. I call on the Government to improve their plan to introduce annual reports, such as by making them quarterly reports. With more regular reporting and a system that allows for this, we can see where there are problem areas and react much more efficiently.⁴³

A full transcript of the debate can be viewed [here](#).

⁴³ [HC Deb 15 November 2021 c134](#)

6 Further reading

The following documents and sources contain further information and data on storm overflows and related issues.

National Audit Office report

In September 2021, the National Audit Office published [Understanding storm overflows: Exploratory analysis of Environment Agency data](#). This report provides further information on storm overflows and explains how they are monitored. It also presents findings from an “exploratory analysis of data used by the Environment Agency as part of its regulation of storm overflows.” The report was used “to provide contextual data to support the Environmental Audit Committee’s inquiry into water quality in rivers and set out areas for further consideration”.⁴⁴

River Trust storm overflows map

The Rivers Trust has produced an [interactive map](#) which uses Environment Agency data on storm overflows from 2021. Users can view data on the number of spills and total duration of discharges in hours for specific storm overflows. The data can also be downloaded from the Rivers Trust Website.

Alternatively, the storm overflow data for 2021 and 2020 can be downloaded directly from the [Environment Agency website](#).

Commons Library briefings

The following Library briefings contain further details on measures in the Environment Act and coverage of parliamentary debate on storm overflows.

- [Environment Bill 2019-21 and 2021-22: Report on Committee and Remaining stages in the Commons](#)
- [Environment Bill 2021-22: Lords amendments and “ping pong” stages](#)

⁴⁴ NAO, [Understanding storm overflows: Exploratory analysis of Environment Agency data](#), 17 Sep 2021

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