Pollution Incident Reduction Plan 2023

Our approach to environmental stewardship

United Utilities

Water for the North West

Foreword

Every day we supply more than three million homes with clean, high quality drinking water and then take away the wastewater to safely treat it before returning it to the environment. We do this 24 hours a day, 365 days a year. It's something we're committed to getting right and something we're very proud of.

Our network of sewers is around 79,000 kilometres in length – enough to reach twice around the earth. Most of the time the activities involved in producing clean drinking water and treating the North West's wastewater are completed without complication. However, we know that sometimes things go wrong which results in an unplanned discharge to the local water environment, which can cause harm and are known as pollutions. Other parties have activities which can cause harm to the water environment too like industry, agriculture and illegal disposal of wastes. Something everyone at United Utilities and myself are committed to reducing is the number of pollution events caused by United Utilities. We are striving to achieve zero pollutions.

Our track record on pollutions is one we are proud of. We are the leaders in the water industry, with the fewest pollution events as well as high levels of self-reporting to our regulator, the Environment Agency (EA). Our pollution event reductions have been across all types of pollution, including "serious pollutions", which cause impacts to large stretches of river or cause harm to animals and insects living in the rivers. In 2019, 2020 and 2022 we had no serious pollutions and in 2021 the EA believes we had a single serious pollution, though this is still under investigation.

Our strong pollution performance has helped us achieve 4 star Environmental Performance Assessment status – the EA's highest level of environmental performance – in five out of the last seven years. For 2022, we were awarded 3 star rating, with the top-ranked green status on all but one metric, delivering improved or sustained high performance.

There has been a lot of focus over the past 18 months on spills from our storm overflows into the environment. This plan does not specifically reference these events as the vast majority are allowable within our Environmental Permits from the EA. Where we're made aware of activations which occur outside of these conditions and cause impact, we treat them as pollutions, and so they will be captured in our plan. If you would like to know specifically what we're doing to reduce spills from storm overflows and other assets operated by us, take a look at our **Better Rivers: Better North West plan.**

Pollutions occur for a wide variety of reasons, so stopping all pollutions doesn't have a simple one size fits all solution. It requires us to think about our processes and assets as a system to make interventions and provide focus across all aspects of the business; from the way we get alerted to problems, how and who responds to these alerts right through to our data management, assurance and reporting processes. From our dedicated operational front line colleagues reacting to incidents to the steadfast analysts and engineers crunching the data to help make plans for the future. We all know how important environmental protection is to our customers, it is important to us too. As you will see our plan takes into account many areas of improvement from the start to finish of any pollution event.

Our first Pollution Incident Reduction Plan (PIRP) was published and launched in September 2020. We delivered 27 initiatives across the business to address the leading causes of our pollutions. These projects included things like:

- Pollution response training for teams
- Stakeholder engagement and customer education
- Better root cause analysis
- Enhanced maintenance reliability strategy
- Dynamic Network Management

The delivery of this programme has supported our commitment towards achieving 40% reduction in Category 1 – 3 by the end of 2025, and helped reduce serious pollutions down to zero. We're proud to be sector frontier in pollution incidents. Appendix 1 shows the contents of our first Pollution Incident Reduction Plan.

As part of our Better Rivers: Better North West pledges and commitments to improving river health in the North West, we hosted our first pollution summit on 9 February 2023. With key stakeholders, such as regulators and local authorities, we discussed the challenges currently faced by our rivers and waterways and how we could all work together to improve them. Our panel of experts were questioned and challenged and we were left with a clear set of actions to implement and work together on.

Our next Pollution Incident Reduction Plan sets out how we see our role of Environmental Stewards and how we're continuing to focus on removing all environmentally impacting pollution events. This plan has received endorsement from the board, who regularly reviews pollution performance and will monitor delivery of this plan to ensure it's on track.

Louise Beardmore
Chief Executive Officer

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Executive summary

We're privileged to serve over three million homes and 200,000 businesses by providing high-quality drinking water and taking away wastewater to safely treat and return back to the environment.

We're committed to doing this in a transparent, resilient way, providing high-quality value for money services. One of the ways we seek to do this is by reducing pollutions which cause harm to the environment. We're working towards a day when this is zero.

Our latest iteration of our Pollution Incident Reduction Plan sets out the role we take very seriously, that of Environmental Stewardship. We describe what we have done so far, where we want to get to and how we plan on getting there. Our plan is set out in four sections:

1. Prevent

This part of the plan means us getting ahead of events before they happen, or being made aware of them as quickly as possible so that no harm is caused. This includes better asset availability, reliability and maintainability, resilient power supplies, better customer awareness and engagement, more sustainable drainage systems (SuDS), blockage reduction programmes, Integrated Drainage Area Strategies, excellent alarm monitoring and management and ensuring our assets are working and up to scratch. Prevention means changing how we operate and maintain our assets so they are available and performing at an optimal level more of the time.

2. Detect

We want to accurately predict when we are at risk of causing a discharge to a water course so we can avoid future incidents and detect problems with our assets which could cause harm to the environment as quickly as possible. So investing in Dynamic Network Management telemetry and making sure we're using the best available real-time information to make decisions, is what we're focusing on in this section. It's also about helping customers find ways to contact us more easily, so they can help us detect problems alongside our river rangers.

3. Respond

Once we have been made aware of a potential or actual pollution event this stage is about making sure we respond quickly, with the right types of resources and make quality interventions to prevent or reduce environmental impact. We also want to make sure any incidents do not happen again so we are working on how to reduce our repeat pollution events. It's also about collecting the right data at the time of events for use in the final stage…

4. Investigate and report

When we respond to incidents our teams will carry out a thorough investigation to collect evidence of the event to understand the reasons for problems. This means we're collecting and tracking huge amounts of data on when and why things go wrong. We want to build on what we do with this data to turn it into information which colleagues across the business can use to prevent future events occurring. Finally, reporting to you, our customers as well as our other stakeholders and regulators in a reliable, accurate and complete way is something we are hugely passionate about and take very seriously. We know you have very high expectations of us and we know it is important that you feel you can trust us to spend the money you pay on your water bill wisely. That's why we're committed to transparently reporting our performance.

Our Pollution Incident Reduction Plan sets out our ambition to continue to drive down pollution events in a sustainable way taking the next step in the journey to zero pollutions for customers and the environment.

1 Introduction

We're proud of the role we have played, and continue to play, in improving river and bathing water quality. We've made significant investments in the assets and systems that provide essential services to people and businesses across the region, and have demonstrated the benefits of this investment through reducing pollution incidents. We want to go further to reduce pollution events even more. Ultimately, we want to prevent all pollution events which cause environmental harm.

We know this is going to be a challenge as we face external pressures outside of our control, such as climate change, population growth and consumer trends. Together with the cost of living crisis, it means that now more than ever we need to invest wisely and operate as efficiently as possible.

Climate change brings more extreme weather, which impacts our assets in ways we cannot always plan for, and puts extra demands on the systems in ways it has not been designed to operate in. Higher temperatures means the water environment is less resilient to other pressures put on it, like waste discharges and run-off from activities such as agriculture.

Population growth and customer trends can be more predictable than climate change, but can cause more acute impacts as the use of land in the wastewater catchment changes – leading to more surface water run-off into the sewer network and ultimately placing extra demand on our systems. We are working to remove surface water where possible and support the use of sustainable drainage systems to help with this too.

As you'll see in this report, we have taken strides to reduce the pollution events that occur across the North West. We take our responsibilities seriously and we want to do more.

2 What is a pollution incident?

The EA – the environmental regulator – has a method of categorising pollution incidents based on the severity of impact to the environment. All water companies use this categorisation to assess the events that happen in our areas and report them to the EA. Serious pollution incidents are those categorised as 1 or 2. These cause damage to the local environment, leading to a threat to wildlife and in the worst cases putting the public at risk. Category 3 incidents, while less significant, still have a minor impact on the environment, people or property, with only a limited or localised effect on water quality. Category 4 incidents, while registered as pollution incidents, have no impact on the environment.

As you might expect, serious pollution incidents occur very infrequently. We had none in 2019, 2020 or 2022, and only one in 2021. Category 3 incidents occur more frequently but we are reducing these year on year and we had the lowest number of pollution incidents per 10,000 kilometres of sewers in England in 2021 – outperforming any other water company. Most of our events are actually category 4, meaning they have had no impact on the environment, but we are making similar reductions in these events too.

You may have seen in the media articles about spills from sewers into rivers. Spills are not necessarily pollution incidents. In the event of heavy rainfall, for example, we are allowed under the permits issued to us by the EA to spill wastewater into rivers at this time. This is because the heavy rain will mean any effluent is diluted to a level which will not impact the environment. This means that spills are not included in our Pollution Incident Reduction Plan. However, our **Better Rivers: Better North West strategy** explains what we're doing to reduce spills to the environment.

3 Our past performance

We're pleased to be able to demonstrate large reductions in our pollution events since 2015. We've done this through making operational improvements, enhancing our review process, investing in our people, assets and systems, and working with customers, stakeholders and regulators.

We've delivered the EA's expectations as they set out in 2013.

EA expectation	Performance delivered	What we're doing next
Reduction in category 1 and 2 pollution incidents, trending towards zero by 2020. There should be at least a 50% reduction compared to numbers of serious incidents recorded in 2012.	Zero achieved in 2019, 2020 and 2022.	We want to sustain this performance as long as possible. Our target is zero serious pollution events.
A trend to minimise all pollution incidents (category 1 to 3) by 2020, with at least a third reduction compared to 2012. 40% reduction in category 1-3 pollution incidents from 2016 to 2025.	Between 2012 and 2021 we have delivered a 58% reduction in category 1-3 pollution incidents.	By the end of 2024 we want to be having fewer than 100 pollution events a year.
High levels of self-reporting of pollution incidents with at least 75% of incidents self-reported by 2020.	In 2021 we achieved 81%.	We aim to self-report 90% of pollution incidents from our treatment works and pumping stations and 80% overall from all asset types.

3 Our past performance

We're proud of our track record on pollution. The following figures show how we have reduced pollution events and how our self-reporting performance demonstrates our commitment to transparent reporting.

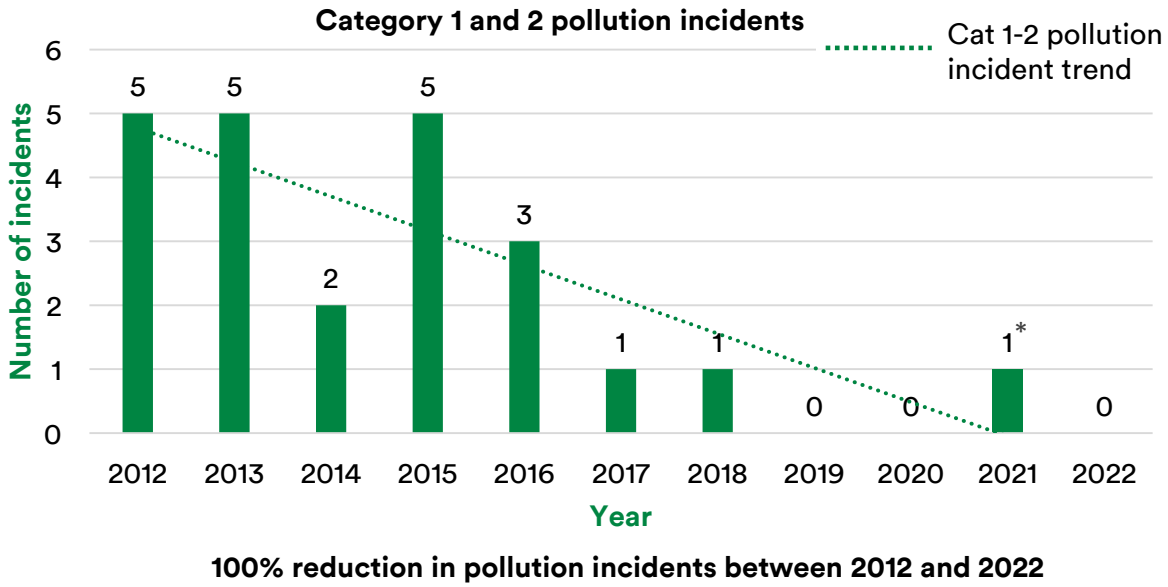


Figure 1: Category 1 and 2 pollution incidents 2012–22
* 2021 pollution incident is in dispute with the EA

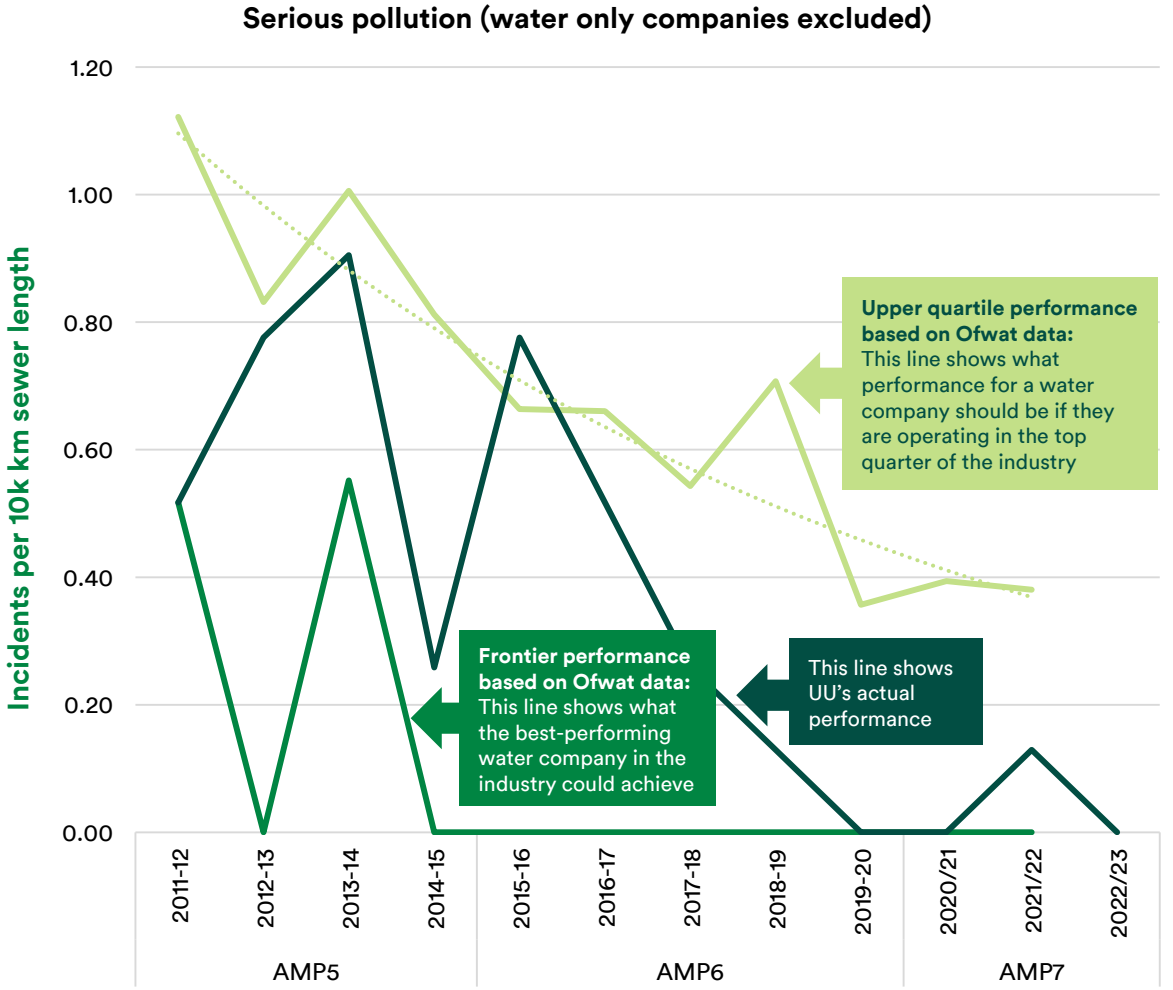
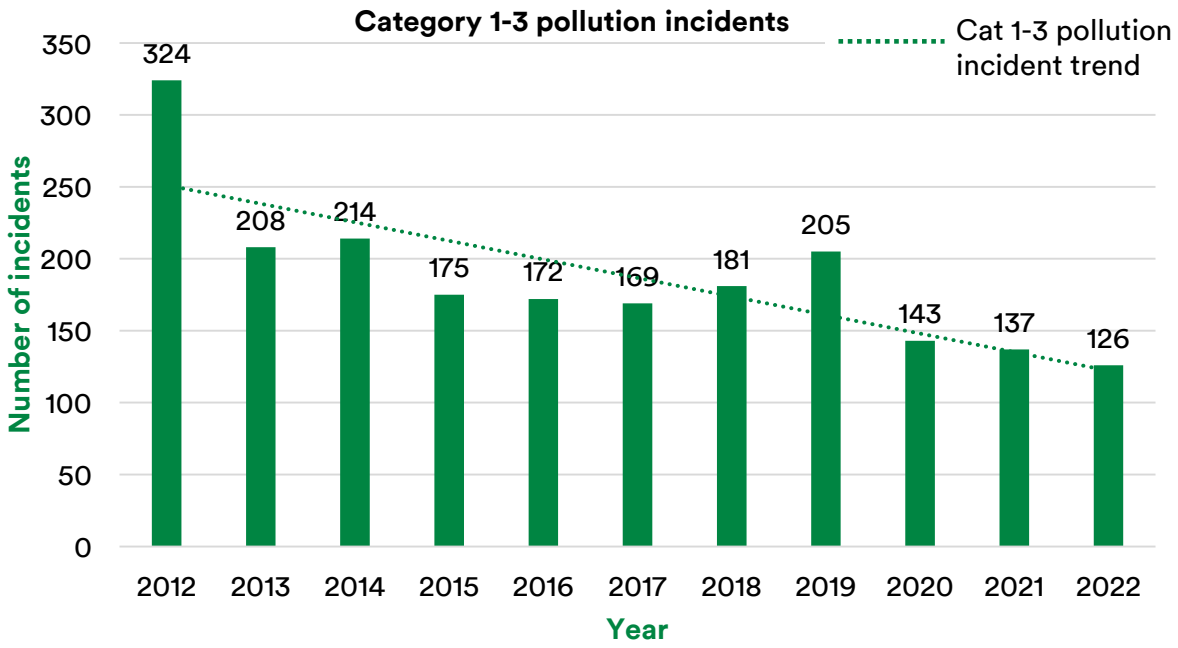


Figure 2: UU category 1 and 2 pollution incidents 2012–22 compared with water industry performance

3 Our past performance



61% reduction in pollution incidents between 2012 and 2022

Figure 3: Category 1, 2 and 3 pollution incidents 2012–22

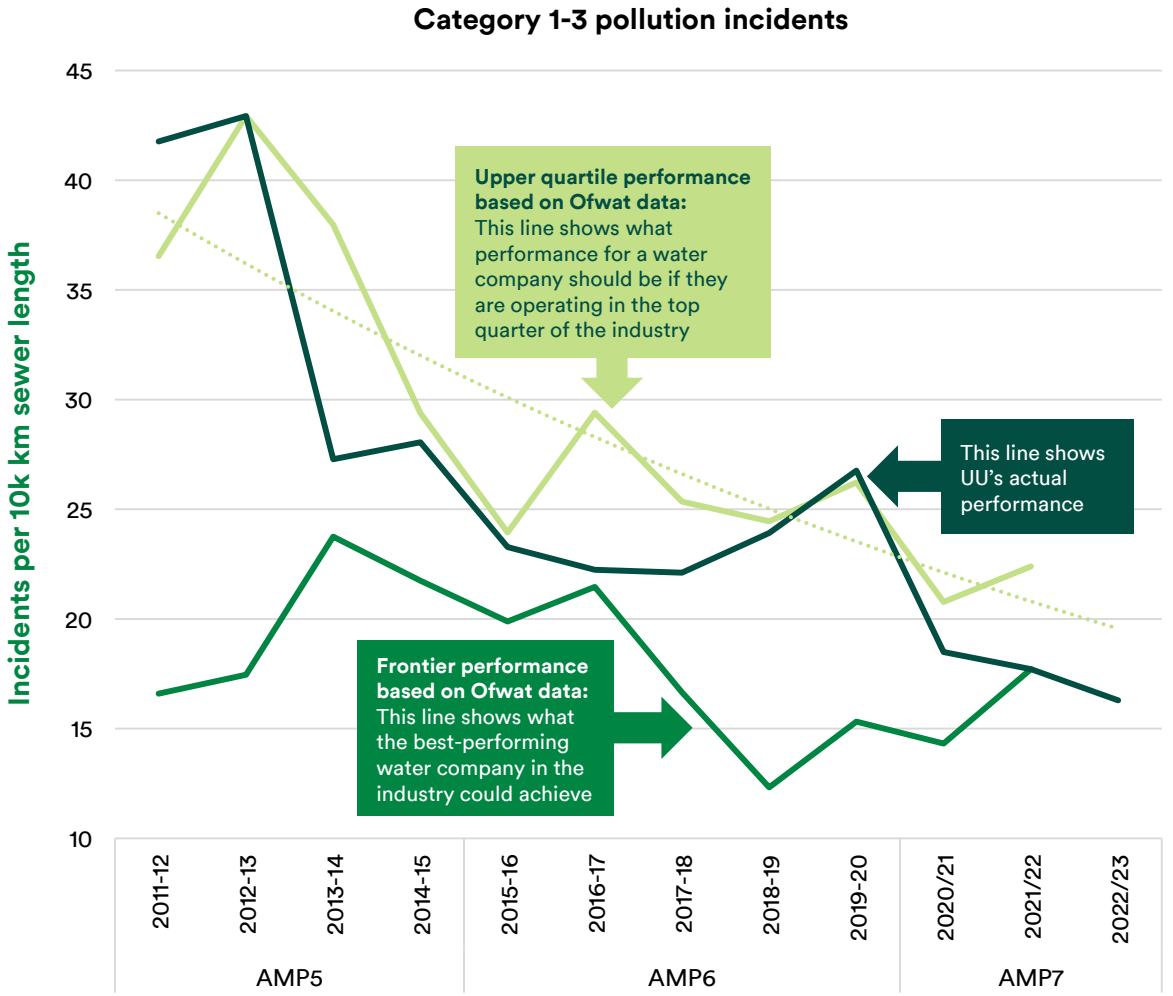


Figure 4: UU Category 1, 2 and 3 pollution incidents 2012–22 compared with water industry performance

3 Our past performance

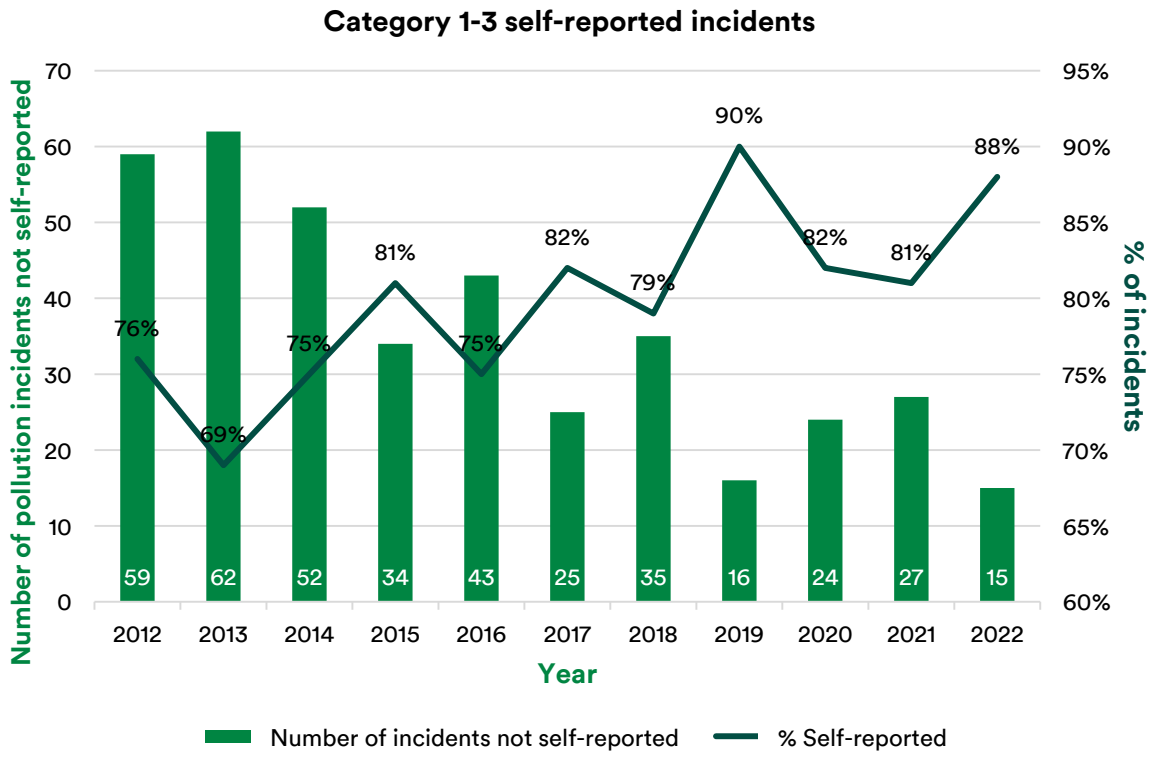


Figure 5: **Percentage of category 1, 2 and 3 pollution incidents self-reported to the EA**

In 2020 we published our first **Pollution Incident Reduction Plan.** We're pleased to report that we've completed all of the actions by their deadlines. There is one other action which is ongoing and we are on track for this to be completed by its deadline. We will continue to track this and report on its completion in this second iteration of the PIRP. We want you to be able to trust that we have done this properly, so we commissioned Jacobs to carry out an external verification audit which required us to prove that we have done what we said we would do. We're pleased to confirm that we passed phases 1 and 2 of this audit. 26/27 actions audited and assured as passed, the 27th action is not due for completion until later in 2023, so will be audited once it is complete.

Statement from Jacobs Auditing Services

Jacobs UK Ltd has been appointed by United Utilities Limited to provide independent technical assurance of their Pollution Incident Reduction Plan (PIRP) action delivery for the period March 2020 to July 2022. The assurance to date has been delivered through 2 separate phases, with Phase 1 covering the 21 actions delivered between March 2020 and March 2021 and Phase 2 covering the 5 actions delivered between April 2021 and July 2022.

Through a series of virtual MS Teams meetings and information exchanges, we have reviewed the processes, outcomes and supporting evidence on which the actions are based.

On the basis of our audit work, we are satisfied that all actions listed in Section 3 above that comprises the PIRP Action Plan have been satisfactorily achieved, with no outstanding actions pending.

A final Phase 3 is forecast for completion in early 2023 to review the final outstanding action – Action 18.

Jacobs

3 Our past performance

3.1 Causes of pollutions

When pollution events happen, we respond to stop the pollution. At the time of doing this we capture evidence such as photos and water quality samples. To learn from the event, we then carry out Post Incident Reviews. We use trusted analysis approaches, such as 'fish bone' or '5 whys', to identify the underlying, contributory and root causes of the incident. We then use this data to track trends, make operational interventions and, where relevant, develop investment plans.

The figure below shows a breakdown of our pollutions from different asset types.

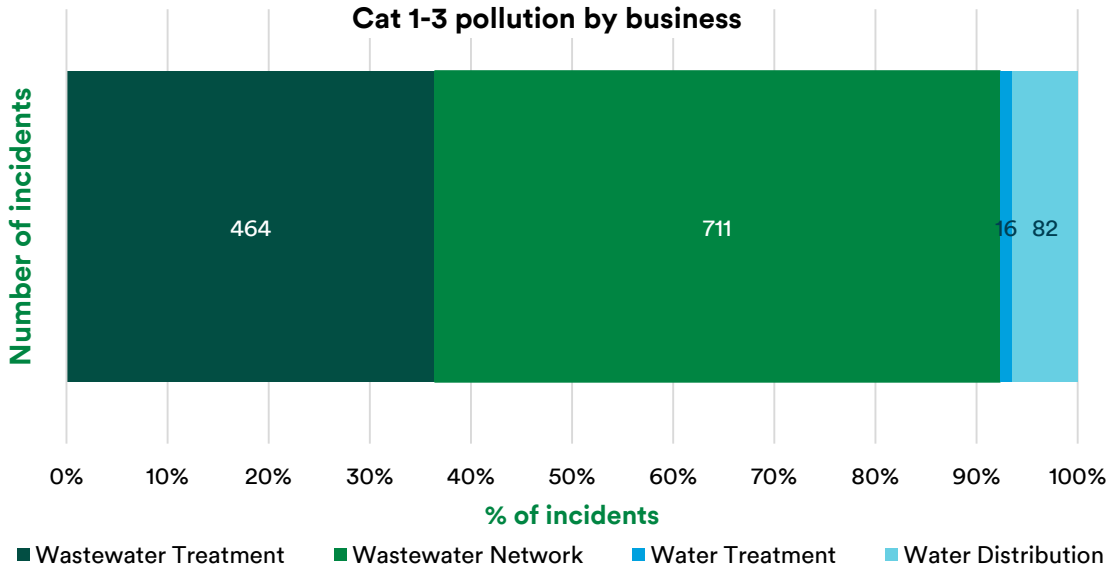


Figure 6: **Pollution asset types for Category 1-3 pollution incidents from 2015 to 2021**

Most of our incidents come from our 77,300-kilometre wastewater network. We all know that we should only flush the three p's (pee, poo and toilet paper) down the loo, but because our network is used by millions of people and in lots of places rain and surface water can get into the network as well, it means that blockages can occur – stopping the flow of wastewater. Population growth, climate change and customer behaviour all affect the wastewater network, and much of this is outside of our control.

The next biggest source of pollution is wastewater treatment works. We have 565 facilities which treat wastewater across the North West. The vast majority of the time wastewater is treated and returned safely to the environment. However, occasionally these sites can also have problems with assets or they're impacted by power cuts, which can result in sewage pollutions.

Wastewater has the biggest impact on the environment, but clean water distribution and treatment do also play a small part. This is from bursts on water pipes leading to drinking water escaping to rivers or streams. Drinking water has low levels of chlorine in it to keep it safe for drinking, but if this got into the environment in large volumes it could cause a problem.

3 Our past performance

Focusing on wastewater, we have broken down the data from 2015 to 2021 into the root causes of pollutions.

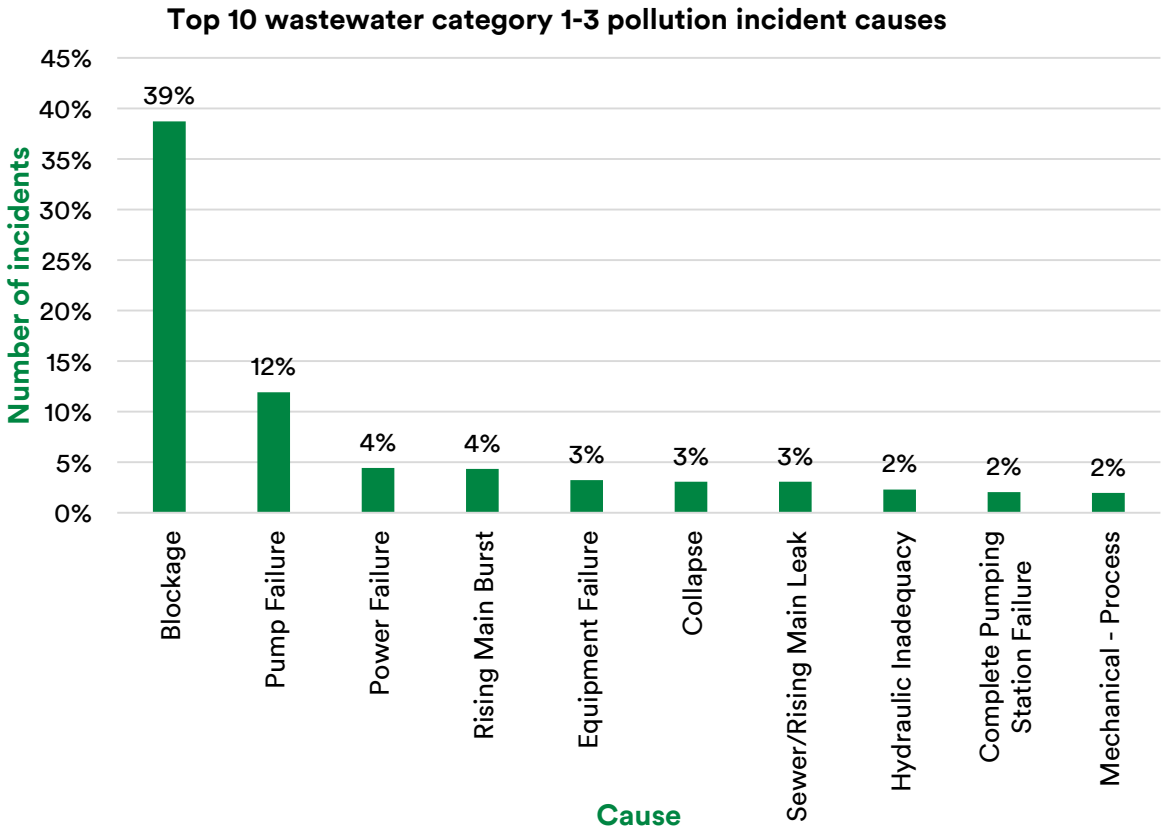


Figure 7: **Pollution root causes for category 1, 2 and 3 pollution incidents from 2015 to 2021**

The main causes of our pollutions are blockages in our pipes and assets caused by people disposing of items which are not supposed to be flushed or poured down the sink – such as wipes, sanitary products, food and fat. These items clump together in our sewers or get stuck in our pumps, meaning they don't work. This causes the wastewater to escape from overflows or manholes and get into the environment.

Another common cause of pollutions is pump failure due to mechanical problems and as a result of issues following pump blockages and power failure. We're taking action to reduce the risk of this occurring in the future by improving our maintenance activities, moving to preventative rather than reactive maintenance.

3 Our past performance

3.2 How we respond to pollutions

We're made aware of pollutions in a number of ways:

- We receive an alert from our Dynamic Network Management system, which uses predictive analytics to forecast when our assets aren't performing optimally and so could be at risk of causing environmental harm
- Telemetry on our assets alerts us to something going wrong
- A colleague sees an issue when carrying out their role
- Customers contact us to tell us they have seen something that doesn't look right **If you see something wrong, please report it to us by calling 0345 672 3723. The more detail you can give us on the location and what's happening, the better.**
- The EA contacts us, having been made aware by their staff or a member of the public

We'd love people to contact us before the EA if they see something they think might be a pollution event. This is because it means we can respond faster and stop the incident quicker. We will then report the incident to the EA.

Once we're made aware of a potential pollution we respond by sending a trained United Utilities colleague who has the right skills, experience and equipment to investigate the issue, find the source of the pollution and resolve it as soon as possible.

Part of the procedure when they respond is to contact the EA to tell them about the event and then collect evidence on the severity of the incident. They do this by taking photos, providing a description of activities they have carried out and taking samples of the water quality to see if anything from the discharge is at high enough levels to damage the environment.

The evidence and information collated is used to categorise the incident and then submitted to the EA for them to sign off.

We then report our annual pollution performance to the EA and our financial regulator Ofwat, so our performance can be monitored and tracked.

4 How we've developed this Pollution Incident Reduction Plan

We've delivered on the first iteration of the Pollution Incident Reduction Plan, as demonstrated in section 3, but we don't want to stop there. We have big aspirations and stretching targets to reduce pollutions to zero as soon as possible. That's why we've created this latest version of our Pollution Incident Reduction Plan.

This plan has been brought together with the help of subject matter experts from across our operational, customer-facing, communications and reporting and regulatory teams. We believe this is a holistic plan which seeks to enhance our performance across every aspect of pollution, from how we engage with customers and respond to incidents quickly and effectively right through to how we report to our regulators and other interested parties.

We've held workshops with these colleagues to draw on their experience and, supported by what our data shows, come up with projects and action plans to make a real difference.

4.1 Environmental stewardship – our role

We have been a leader in the water industry when it comes to environmental performance for a number of years. We've achieved 4 star status (the highest possible rating) in the EA's Environmental Performance Assessment (EPA) five times in the last seven years. In 2022's EPA we are once again the industry leader in pollution reduction, though our overall status has dropped to 3 star.

In this next phase, as customers' and regulators' expectations of us grow, we want to build on our strong performance to be environmental stewards. We know what a precious resource the water environment is, and we're proud that we make a positive contribution every day to keeping the environment safe, but we know we can do more.

What environmental stewardship means to us

4 How we've developed this Pollution Incident Reduction Plan

4.2 Our targets

We have set ourselves stretching targets in addition to the expectations of the EA. We set out the EA's expectations in section 3 and have reported below how we're doing against them.

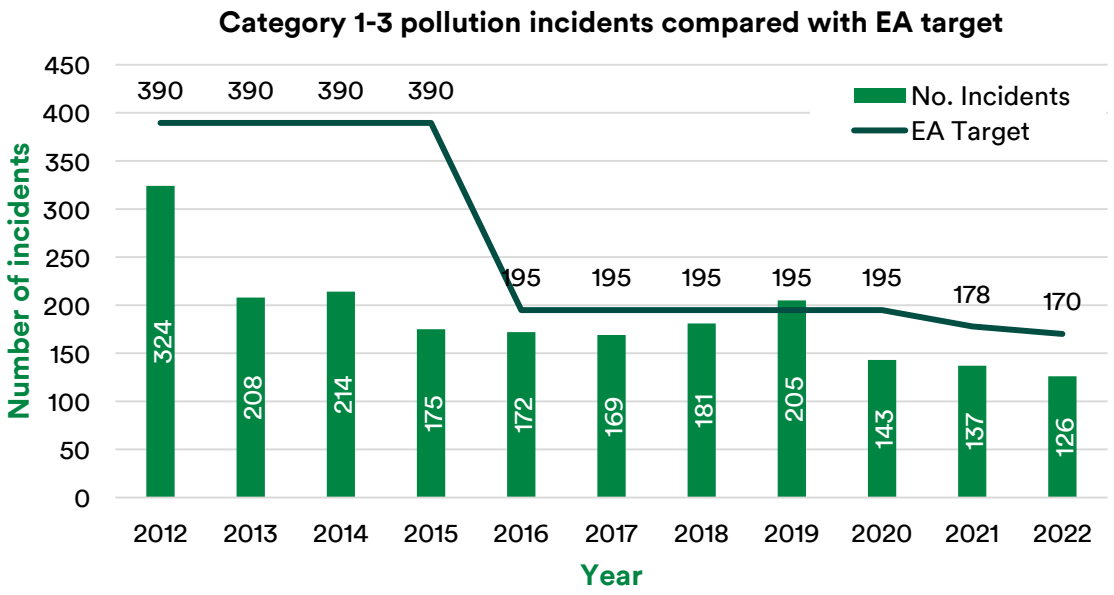


Figure 8: **Category 1-3 pollution incidents compared with EA target**

5 Our plan

We've categorised our projects and interventions in a way that sets out where in the pollution process we think they will add value and improve performance. In section 6 we itemise each of the projects, and below we explain at a higher level the aims of the projects and how we expect to deliver them. The projects are themed under four intervention points: prevent; detect; respond; and investigate and report.

5.1 Prevent

This part of the plan means us getting ahead of events before they happen, or being made aware of them as quickly as possible so that no harm is caused. This includes better asset availability, reliability and maintainability, resilient power supplies, better customer engagement, more sustainable drainage systems (SuDS), blockage reduction programmes, excellent alarm monitoring and management and ensuring our assets are working and up to scratch. Prevention means changing how we operate and maintain our assets so they are available and performing at an optimal level more of the time.

Resilience to Mains Power Failures

One of the main causes of pollutions at our wastewater treatment works and wastewater pumping stations is mains power supply interruptions (black outs) or dips (brown outs), which then cause significant consequences to our assets. When voltage levels drop or there is a power supply interruption, our assets stop working or switch into modes which are designed to protect them. Communication between site and our Integrated Control Centre can be compromised and our asset performance cannot be seen remotely. If power cuts or dips stop our assets working for any reason, this means they are not carrying out the waste treatment or waste pumping that they should be, which can result in pollutions. The power resilience work we are doing is identifying sites which are at particular risk of power failures which would then result in pollution incidents. We carry out investigations into the things we can do to make the site more resilient and make sure our electrical infrastructure is operating as designed and is maintained – which helps assets tolerate variations in voltage more easily.

Risk management through visibility of asset availability

In the event that things go wrong, we have to manage the situation so that there is as little impact to customers and the environment as possible. Risk management is about understanding as much as possible about the problems, solutions and potential consequences, so that informed decisions can be made to protect customers and the environment while the problem is being fixed. To do this even better than we do at the moment, we want to make sure there is visibility across the company of asset performance and availability. We have a lot of pumps to allow us to move water and wastewater around the region, so pump availability is very important to us. When a pump fails it can have consequences on the environment, but if we know failures have occurred we can easily repair or mitigate any potential problems. We want to improve the visibility of pump availability across the company so that colleagues responding to alerts and alarms can make more informed decisions, which will help protect the environment.

Helping customers reduce misconnections

Engaging with customers, so that they use the sewer network correctly and understand how they can play their part in helping to reduce pollution, is a key part of our Pollution Incident Reduction Plan – it's something everyone in the North West can contribute to.

Misconnections

When people have building work or renovations to their properties, sometimes waste from toilets, kitchens and utility rooms can end up being misconnected and plumbed into surface water drains rather than waste or foul drains. This causes problems for the environment as wastewater will go straight to the environment untreated. We're working with the EA and local environmental health departments to identify misconnected properties and ensure misconnections are corrected. We're are also working with other groups to educate people on how to prevent misconnections and environmental harm.

5 Our plan

Customer campaigns
We are continuing to work with customers to engage with them and raise awareness on how to help prevent, blockages, sewer flooding and pollutions by only flushing the three p's down the toilet (pee, poo and toilet paper) and to never pour fats, oils or grease down the drain. Putting anything into the sewer which is not supposed to be there can cause blockages, which can ultimately cause pollutions as wastewater escapes the network.

Maintenance Excellence – Maintenance Workbank Review

To keep our assets available and reliable we need to have an effective operational and maintenance strategy in place, which means the right tasks are scheduled at the right time to our field teams – essential to managing our water and wastewater systems in the best way. Successful management of our water and wastewater assets allows us to ensure that we protect the environment and enhance the level of service that we deliver to customers. We're currently carrying out a large scale review of our workbank tasks for our mechanical, electrical and instrument assets. We're using the latest criticality assessments and maintenance principles to make sure the most effective maintenance strategy is applied to our assets regionally, which will reduce the risk of assets failing and causing harm to our environment.

Increasing sustainable drainage systems

With population growth, climate change and increased urbanisation, sustainable drainage systems (SuDS) are an effective way to manage increasing rainfall levels. By slowing the water we can help manage flooding, improve water quality and protect wildlife. This is part of our catchment systems thinking approach – ensuring that we're managing catchments in a holistic way and considering what is best for the environment, customers and communities. We work collaboratively to build the right interventions in the right place to deliver environmental and water quality improvements. We continually develop our SuDS policy and adoption guidance, promoting incentive schemes and working with local schools and communities on SuDS techniques and infrastructure that protects our environment.

Blockage reduction programme

Blockages cause a significant number of pollutions as a result of sewers being used for more than wastewater and rain water. As well as customer engagement to ensure only the right things go into the network, we're working on finding developing blockages and clearing them before they affect customers or the environment. We are constantly optimising our blockage reduction plan, which covers key assets at wastewater treatment sites, wastewater pumping stations, and our sewer network.

Improved asset performance monitoring

Understanding the health and the performance of our assets is essential to managing our water and wastewater systems in the best way. As part of our Systems Thinking approach, we're implementing our predictive maintenance strategy across our team of precision maintenance engineers – using vibration, thermography, laser alignment tools and fluid analysis and techniques. We plan to further deploy this strategy regionally across our teams of field service engineers and network asset engineers.

5 Our plan

5.2 Detect

Investing in Dynamic Network Management telemetry will allow us to use the best available real-time information to quickly detect problems with our assets which could cause harm to the environment. This part of our plan is also about helping customers find ways to contact us more easily, so they can help us detect problems alongside our river rangers.

Dynamic Network Management

We're installing around 19,000 sensors in our sewers to help us understand their performance better. This will ensure we can respond to developing issues before they have an impact on customers or the environment. This innovative project has been developed as part of our Systems Thinking approach, to help us become more proactive in managing our sewer network. We're able to monitor the usual behaviour of a piece of network and using artificial intelligence we can identify if changes are happening over time which would suggest a developing problem. We can then send operational teams to investigate before anything goes wrong.

We initially focused this work on reducing customer-impacting events from sewer flooding. Following success in this area we're now looking at pollution reduction.

Customer engagement

Customers who live near, and use, the water courses in the North West are sometimes best placed to spot when something is going wrong which might be having an impact on the environment. We're focusing on doing three things in this area to improve the detection and reporting of pollutions. We've created a team of river rangers – United Utilities colleagues tasked with working on the River Tame at first to engage with and educate water course users about sewer outfalls and make checks of our assets so we can be the first to know if there is an issue. We have updated our corporate website to give the most up to date information about reporting pollutions, and we are working with internet search engine providers to help people find United Utilities and report a pollution to us quickly – allowing us to resolve problems more promptly.

Refined alert management and response

Across our region we rely on telemetry from our sites and assets to keep us informed on their operational status and performance. The day-to-day centralised monitoring of our systems and triage of alarms is a critical function that helps us to operate and manage our sites safely and optimally. We will be working with our monitoring and control team to ensure we have the correct priority and severity set on our alarms, and that robust communications and processes are in place to reduce the risk of a pollution incident occurring and allow us to respond effectively in the event of a confirmed incident.

5 Our plan

5.3 Respond

Once we've been made aware of a potential or actual pollution event, this stage of our plan is about making sure we respond quickly, with the right types of resources, and make quality interventions to prevent or reduce environmental impact. We're also working on how to reduce repeat pollution events by collecting the right data at the time of the incident.

Zero repeats

When something goes wrong and a pollution incident occurs, we want to make sure the same thing doesn't happen again. We've developed projects specifically focusing on preventing repeat incidents, which use a combination of focused root cause investigation, mitigation planning and investment in long-term solutions. They involve extra management focus and support for problems that are particularly hard to resolve, and more detailed hazard review work where a thorough end-to-end investigation is carried out to try to predict where failures could occur in the future and put plans in place to mitigate this.

External water quality assessments

When pollutions occur we want to ensure we fully understand the impact they've had on the environment, particularly when the incident is looking to be causing serious harm. In these circumstances we want to be able to call upon external experts to support with the environmental impact assessment and provide extra expertise – such as more detailed water quality analysis or assessments of macro and micro invertebrate and fish health to help us fully understand the consequences of the pollution. This will help us prevent incidents from happening in the future at other sites, and will better inform if we need to take any short, medium or long-term action to help return the water course to its pre-pollution state.

Extreme weather, enhanced contingency and emergency response plans

As the effects of climate change are felt in the form of more frequent and extreme weather events like storms, floods, droughts and freezing temperatures, we know we need to do more to help our assets perform throughout all of these challenging conditions. This project is about ensuring lessons are learnt from Storm Arwen in November 2021, so that pollution events are reduced or mitigated should such an unprecedented storm event happen again. The development of contingency tools and plans will help with assessing readiness to deal with extreme weather or emergency events more effectively, reducing risk to our environment.

Mitigation vehicles

We have invested in six vehicles which are filled with equipment which can help mitigate pollutions when they are occurring over land. If a sewer becomes blocked and sewage escapes up through a manhole, over a road, through a rain water drain, surface water drain, or field, and then into a water course, we can deploy these vehicles and the specialist equipment to try to reduce the amount of sewage or prevent the wastewater from getting into the river altogether. They're filled with hay bales, sand bags, bunds, spill kits and gulley covers to collect and stop sewage from escaping. While these vehicles may not prevent incidents in the first place, they will be vital in reducing the impact of ongoing incidents and help us to protect the environment. This project will standardise the way we operate and manage these types of situations regionally.

5 Our plan

5.4 Investigate and report

We want to build on what we do with the data from our incident investigations to turn it into information which colleagues across the business can use to prevent future events occurring. Additionally, reporting to customers, stakeholders and regulators in a reliable, accurate and complete way is something we take very seriously. We know they have very high expectations of us and it's important that customers can trust us to spend the money they pay through their water bills wisely.

Continuous improvement

Responding to and reducing pollutions is something we've been focused on for many years, as is demonstrated by our 58% reduction in pollutions since 2012. However, we know there is still more to do as we strive to achieve zero pollutions. One of the ways we can do this is to through continuous improvement across every aspect of pollutions, from detection, response and investigation to the way we learn lessons from previous incidents. The processes and procedures around these activities are important to ensure consistency and make sure that the quality of investigation and reporting at each stage of the pollution process is maintained to the right standard. This will allow us to identify the relevant improvement projects required to reduce pollutions in the future. This project will include a review of our pollution processes to make sure they're aligned with our aspirations and the requirements of legislation and regulation, and are clear and concise so that colleagues know what they have to do to comply. It will also look at our organisational structure to ensure we have the right resource at each stage of the process.

Training

Once the processes and procedures have been refined, we'll ensure all colleagues have had relevant briefings or training to ensure they can carry out their role effectively. The training will build on the work already done in the 2020 version of this document. We will also link it to broader technical training required for optimisation of treatment processes to ensure permit compliance on our treatment works.

6 Action plan

The table below sets out our key projects across each of the four areas of our Pollution Incident Reduction Plan. These projects will be externally audited once they are complete to ensure we have delivered on them fully for our customers and the environment.

Project number	Project name	Theme	Outcome	Timescale
1	Resilience to mains power failures	Prevent	Sites at high risk of having pollutions due to mains power failures have interventions and mitigation put in place to make them more resilient	Dec 2024
2	Risk management through visibility of asset availability	Prevent	Operational and monitoring teams will have better understanding of the availability of assets on sites (utilising real time data), meaning they can put better mitigation in place and respond to other triggers sooner	Oct 2024
3	Helping customers reduce misconnections	Prevent	Fewer private misconnections will reduce wastewater which should be treated from going into surface water drains and causing pollutions	Mar 2025
4	Customer campaigns	Prevent	Customers will be better informed about pollutions and how to prevent them by only flushing the three p's (pee, poo and toilet paper) and not disposing of fats down drains	Dec 2024
5	Maintenance Excellence workbank review	Prevent	Ensuring we have the right maintenance strategy and maintenance tasks being deployed to our assets, preventing asset failure and protecting our environment	Dec 2024
6	Increasing SuDS (Sustainable Drainage Systems)	Prevent	Better separation of wastewater and surface water will mean our sewers will not get as overwhelmed by heavy rainfall events	Dec 2024
7	Blockage reduction programme	Prevent	We will be removing blockages from our network before they cause an impact to customers or the environment	Mar 2025
8	Improved asset performance monitoring	Prevent	Operational and monitoring teams will have better understanding of how well assets on sites are performing, (utilising handheld asset condition equipment and online asset condition systems), meaning they can put better mitigation in place and respond to other triggers sooner	Dec 2024
9	River ranger roles	Detect	More eyes and ears on our rivers, engaging with customers and spotting problems on our networks so that we can respond to potential pollutions more quickly	Oct 2024

6 Action plan

Project number	Project name	Theme	Outcome	Timescale
10	Making it easier to report pollutions to UU	Detect	Working with search engines to make it easier to find how to report a pollution to us and new pollution reporting webpage on our website	Mar 2023
11	Dynamic Network Management (DNM)	Detect	Increasing the information we have on how well our sewer network is performing with the installation of monitors which report to a central team and enabling them to initiate responses to problems sooner	Dec 2024
12	Refined alarm/alert management and response to incidents	Detect	Working to improve our already excellent monitoring and control function to make better informed decisions about when and how to respond to alarms. This will mean risks are managed better and real incidents are responded to more quickly	Dec 2023
13	Zero repeat pollutions	Respond	When pollutions do occur, making sure we have processes in place to investigate and prevent the same thing happening again in the same place	Mar 2024
14	External expert water quality assessments	Respond	When pollutions occur which could be serious, making sure we have external experts available to support in our investigations so the true environmental impact is understood – enabling us to better respond	Dec 2024
15	Extreme weather, enhanced contingency and emergency response plans	Respond	Having plans in place to ensure the impacts of climate change and extreme weather are mitigated as much as possible	Dec 2023
16	Mitigation vehicles	Respond	Having specific vehicles in place to respond to overland pollutions promptly, meaning wastewater and sewage is prevented from entering the water course as much as possible	Dec 2023
17	Refining our pollution procedures and processes	Investigate and report	Clear, concise procedures and governance processes which ensure appropriate pollution responses and transparent reporting to stakeholders	Jul 2024
18	Role-specific pollution training	Investigate and report	Training which is specific to the person and their role in pollution prevention, detection, response, investigation or reporting	Dec 2024

7 Governance, monitoring and review

To ensure this plan is maintained, transparent to customers and stakeholders, and delivery focused, we are committing to a level of internal governance, external assurance and EA review and sign-off.

Level	Frequency	Detail
Networks pollution review group	Weekly	All pollutions from networks assets are reviewed and investigated before submission to the EA
Pollution panel	Biweekly	All category 1-3 pollution incidents and those that are not self-reported have a root cause investigation before being presented to a panel of peers and subject matter experts to ensure learnings are taken to prevent the same incidents happening in future
Wastewater treatment pollution performance reporting	Biweekly	Wastewater treatment director and senior leadership team review performance to identify areas where interventions are required
Pollution improvement group	Monthly	Review of pollution performance and progress of PIRP actions. Track project delivery against plan and manage any risks to timescales, quality or cost
Senior networks group meeting	Monthly	Wastewater network director and senior leadership team review performance to identify areas where interventions are required
Pollution steering group board	Quarterly	Report on progress against plan and manage any escalations from Pollution Improvement Group
United Utilities executive	Quarterly	Review of pollution performance and progress of PIRP actions
Environment Agency/ United Utilities review of progress	Quarterly	Updates through United Utilities/Environment Agency Performance Management Group with escalation routes available to Strategic Liaison Group if necessary
United Utilities board	Annually	Sign off of Pollution Incident Reduction Plans and annual update on delivery
External audit of plan	Annually	Validation and assurance that the plan is being delivered as set out in this document
Environmental AGM	Annually	Update on our plan and engage third party input for collaborative working

7 Governance, monitoring and review

This Pollution Incident Reduction Plan has been developed to cover actions to mitigate the risk of pollution incidents impacting the water environment based on a thorough understanding of the root causes of such incidents.

The operational directors accountable for delivery of actions have confirmed they are deliverable and the plan has been signed off by our board.

Progress will be tracked at several levels in the organisation, including at the executive level through monthly reports on pollution incident performance and progress updates on the planned actions at least quarterly.

Additionally, the plan will be reviewed at least quarterly with the EA to track progress. Each year the plan will be reviewed in light of performance and emerging risks; this may lead to the update of actions or additional actions.

To provide assurance that we are delivering against the plan we will obtain independent assurance of action delivery annually and this will be reported on in updates to the plan which we will ask the Board to sign off.

Appendix 1

Below we have included the actions from our first Pollution Incident Reduction Plan, which have been delivered successfully.

Ref	Theme	Action	Measure/evidence
1	Culture	Ensure that annual mandatory compliance training is completed by relevant operational employees	• Training register
2	Culture	Ensure mandatory Section 166 e-learning is completed annually for relevant operational employees	• Training register
3	Culture	Ensure all new starters complete all suite of environmental pollution and permit training	• Training register
4	Lessons learnt	Centralise the lessons learnt from pollution incident reviews and ensure they are shared across relevant teams	• Compliance bulletins • Business meetings
5	Lessons learnt	Ensure that pollution incident reviews are undertaken for applicable wastewater infrastructure incidents and water incidents	• Standard operating procedure • Briefings • Meetings
6	Lessons learnt	Centralise the lessons learnt from spill investigations and ensure they are shared across relevant teams	• Spill performance dashboard for performance management meetings
7	Effectiveness of interventions	Effectiveness of pollution reduction plan reviewed through business planning meetings	• Compliance Board, Compliance Leads, Compliance and Audit meetings – wastewater treatment • Business Performance Review – wastewater • Network Quality Performance Meeting – water network
8	Performance reporting	Ensure consistent and effective reporting is provided to all relevant parts of the business, including the executive	• Monthly Compliance and Audit, Compliance Leads meetings • Monthly Business Performance Review meetings • Quarterly Business Review meetings with the CEO for deep-dive review of environmental performance measures
9	Performance reporting	Ensure that relevant actions from post incident reviews are reported and escalated though corporate systems in order to develop plans associated with risks	• Make sure business processes are in place to enable reporting

Appendix 1

Ref	Theme	Action	Measure/evidence
10	Incident response	Review guidance for ICC to ensure that water pollution events, when necessary, are considered for environmental implications	• Amend current ICC Response Manager water event process to add a step in to ensure this is considered and acted upon where appropriate
11	Resources	Work with the Environment Agency to minimise the number of non-UU pollution incidents attended to so that correct authority can attend, leading to quicker resolution and improved environmental outcomes	• Discuss examples with Environment Agency at quarterly performance meetings
12	Managing third party risks	Work with electricity suppliers to understand our wider resilience and minimise the risk of power loss	• Scheduled and documented meetings with DNO regarding standards of service, supply quality issues • Power and generator working group set up – drive out SOPs • Review of high-risk sites and assess site power resilience
13	Working with customers	Work with our customers to improve awareness of what they should/shouldn't put down the drain to reduce blockage risk	• Annual performance reporting for performance commitment
14	Working with customers	Deliver a decrease in fats, oils and grease reaching our network through targeted education, monitoring and enforcement of food establishments	• Number of visits to food establishments and FOG reduction
15	Systems Thinking	Explore the opportunity from increased data availability and monitoring for trend analysis and system modelling. Look for opportunities to utilise advanced analytics	• Report/update on opportunities for advanced analytics - List of projects, scope and benefits
16	Long-term planning	Deliver initial view of long-term catchment vulnerability to pollution from population growth, climate change and other influences	• Baseline Risk and Vulnerability Assessment report complete
17	Long-term planning	Plan of risk, opportunities and potential 25-year plan	• Draft DWMP plan issued
18	Long-term planning	Plan of risk, opportunities and potential 25-year plan	• Final DWMP plan issued
19	Long-term planning	In AMP7 we will review the way that we manage our operation to enhance our ability to reduce the number of pollution incidents	• In our annual performance report we discuss how changes in our operation model have led to improvements in our pollution performance

Appendix 1

Ref	Theme	Action	Measure/evidence
20	Culture	Design and delivery of the environmental compliance handbook to wastewater network and water in prioritised way	• Create new or review current
21	Maintenance	Maintenance reliability strategy to be refreshed	• Strategy produced and signed off
22	Maintenance	Maintenance and reliability training to be developed for field staff	• Training materials produced and complete
23	Maintenance	End-to-end maintenance processes reviewed and refined	• Completed review with associated report complete
24	Maintenance	Re-tender of inventory management supplier	• New supplier arrangement in place
25	Lessons learnt	Following the trialled adoption of SuDS in AMP6 we will write a completion report/ training pack highlighting our findings and lessons learnt	• Development of the training package
26	Partnership	We will look to implement sustainable urban drainage solutions in AMP7 and where possible do so in partnership	• Evidence pack upon complete of a scheme
27	Culture	We will commit to contributing to industry wide sustainable drainage projects, sharing our knowledge and data	• Input and drive discussions at industry forums

Appendix 2

Find out more about our environmental improvement plans and other work we're doing across the company.

- **Reducing pollution:** Ways we're improving river health
  https://www.unitedutilities.com/corporate/responsibility/environment/reducing-pollution
- **Making the right connection:** We work jointly with the EA to combat the issue of misconnected household drains
  https://www.unitedutilities.com/help-and-support/wastewater-services/wastewater-pollution/misconnections
- **Stop The Block:** How to help us prevent blockages which can lead to sewer flooding
  https://www.unitedutilities.com/help-and-support/wastewater-services/stop-the-block
- **A sustainable solution:** How we're using sustainable drainage systems to reduce the risk of flooding
  https://www.unitedutilities.com/corporate/responsibility/stakeholders/catchment-systems-thinking/beyond-water-series-alt/a-sustainable-solution
- **Looking to the future:** Enhancing reporting on storm overflows
  https://www.unitedutilities.com/corporate/newsroom/blog/graduates-look-to-the-future
- **Enhancing our rivers:** £300,000 donated to community groups, connecting people to improve river health
  https://www.unitedutilities.com/corporate/responsibility/stakeholders/catchment-systems-thinking/cast-account
- **Treating wastewater:** Making sure we choose the right techniques in the right area
  https://www.unitedutilities.com/corporate/responsibility/stakeholders/catchment-systems-thinking/beyond-water-series-alt/conventional-treatment-works
- **Love Windermere:** Understanding the factors affecting water quality
  https://www.unitedutilities.com/cumbria/our-plans/windermere
- **Bathing waters:** An interactive map for water quality across our 29 bathing waters in the North West
  https://www.unitedutilities.com/help-and-support/wastewater-services/wastewater-pollution/bathing-waters
- **Storm overflows:** How do CSOs work?
  https://www.unitedutilities.com/help-and-support/wastewater-services/wastewater-pollution/what-are-combined-sewer-overflows
- **Our performance:** See how many times storm overflows have operated and how we're improving
  https://www.unitedutilities.com/corporate/responsibility/environment/reducing-pollution/storm-overflows/storm-overflow-performance

United Utilities Water Limited
Haweswater House
Lingley Mere Business Park
Lingley Green Avenue
Great Sankey
Warrington
WA5 3LP

unitedutilities.com

United Utilities

Water for the North West