

Water and sewerage companies' performance

2017 summary

July 2018

A summary of the environmental performance of the 9 water and sewerage companies operating wholly or mainly in England.

Chair's foreword



In February, I called for fines for the most serious pollution incidents to be proportionate to the turnover of water companies. In March, the Secretary of State said the public see “an industry slow to stop leaks, slow to repair them, slow to stop pollution and slow to say sorry.” In April, Ofwat set out an agenda for rebuilding public trust in the sector and the National Infrastructure Commission said if they don't improve infrastructure and water efficiency there won't be enough water to meet demand in the future.

All of this could lead you to believe that England's water is in dire straits, but water quality is better than at any time in over a century, thanks, in part, to the hard work and investment of water companies. So what's going on?

The industrial revolution changed the UK forever, but progress also wrought terrible damage to people's health and the natural landscape, not least rivers. Regulation developed to protect people and the natural world from unfettered profit-making.

Today, the Environment Agency's objectives, to protect people, the environment, and to promote sustainable economic growth, would be a good guide for any modern regulator. We are committed to partnership with the water industry, helping them achieve the best results they can, while regulating them in a fair and transparent way.

This report assesses their performance in terms of pollution incidents, compliance with permits, and managing sewage. There's much to celebrate this year: a majority of companies (7 out of 9) delivered 'Good' or 'Leading' performance. United Utilities and Wessex Water maintained their 'Leading' 4 star status and Severn Trent Water has joined them.

We've seen the highest ever level of self-reporting of pollution incidents (76%, up from 69% in 2015) with 8 of the 9 companies improving, which should help them to better manage their assets and provide quicker action to reduce pollution. There was 100% delivery of environmental improvement schemes for the financial year and sludge use and disposal was 100% in 2017.

But, the number of serious pollution incidents, while down on historic highs, has plateaued in recent years. There's been a rise in the most serious (category 1) pollution incidents to 11, 10 of which were associated with waste water.

The sector is not doing enough to reduce serious pollution incidents and ensure compliance with discharge permits. Pollution incidents cause distress to local communities, blight our rivers and beaches, and damage the reputation of the water industry. We will take tough action against any company, or individual, who causes significant pollution and damage to the environment. The continuing poor performance of South West Water is not acceptable. Northumbrian Water also needs to improve permit compliance.

In addition to those concerns, the whole sector must show clear focus on resilience to climate change. Winter rainfall is increasing, bringing increased risks of flooding, and summer rainfall is decreasing, bringing

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increased risks of drought. We will be looking for this in their 2020 to 2025 business plans, due in the autumn.

The Prime Minister writes in the 25 Year Environment Plan that the UK is an international champion in “building resilience against the extreme weather associated with climate change” and “we will build on our record in the years ahead”.

Investing in resilience to the physical risks of climate change presents a huge economic opportunity to water companies. In this, and in overcoming any obstacles to the protection of people, wildlife, and sustainable growth, the Environment Agency can help.

Overall, the environmental performance of the water industry is good and improving, however public trust in water companies risks being eroded each time performance expectations are not met. In a world of increasing environmental threats, the key to improving performance and building and maintaining trust is seeking partnerships where this delivers the best results.

Thank you to my colleagues for producing this important report.



Emma Howard Boyd, Environment Agency Chair

Our regulation of water companies

The Environment Agency is the environmental regulator for the water industry in England. We regulate and work in partnership with the 9 water and sewerage companies (called water companies in this report) wholly or mainly operating in England, to ensure they:

- protect and improve the environment
- minimise the environmental impact of their assets and activities
- deliver good performance and share good practice
- comply with licences and permits designed to protect people and the environment

We give advice and take enforcement action where appropriate and work with other regulators of the water industry and relevant organisations to achieve beneficial results for people, the environment and economic growth.

Performance messages for 2017

Overall in 2017, the water companies have improved performance compared with 2016. There is a trend of gradual improvement for the sector since the Environmental Performance Assessment (EPA) was first introduced in 2011.

Yet, the sector has some way to go to meet the performance expectations for 2015 to 2020 which the Environment Agency set out in 2013 ([these are shown on page 6](#)).

For 2017, the main performance messages for the sector are:

- a further reduction in the number of serious pollution incidents to 52, compared to 57 in 2016, with a welcome drop in serious sewerage service incidents but a rise in serious clean water service incidents
- a rise in the most serious (category 1) pollution incidents to 11 (compared to 9 in 2016, after 2 record low years when there were only 4 per year) 10 of which were associated with waste water
- a slight reduction in the total number of pollution incidents (category 1 to 3) at 1,827, compared to 1,902 in 2016 and 1,742 in 2015
- the highest ever level of self-reporting of pollution incidents at 76% (72% in 2016, and 69% in 2015) with 8 of the 9 companies improving, which should help them to better manage their assets and provide quicker action to reduce pollution
- compliance with numeric permit conditions at Sewage Treatment Works (STW) and Water Treatment Works (WTW) remains good with 98.6% of permits compliant, the same as in 2016, compared to 98.7% in 2015 - further improvement is needed to meet the 100% expectation
- sludge use and disposal in 2017 was 100% for the sector, with all companies reporting 100% satisfactory sludge use and disposal for the EPA metric
- all companies reported good performance, with 100% delivery of planned environmental improvement schemes for the financial year to March 2018
- for 2017/2018, 8 of the 9 companies reported a score of 100 for the Security of Supply Index for water availability and green status in the EPA, with one company reporting 97 and amber status

We are taking action with the companies, challenging them to address areas where they are failing or not meeting our performance expectations. We describe the actions we take in each section below.

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This report is about the 9 water and sewerage companies that provide clean (drinking) water and waste water (sewerage) services. There are also a number of water only companies providing only drinking water, and a number of companies providing drinking and sewerage services on a localised basis. These are not covered in this report.

Water companies provide an essential public service that underpins the social and economic health of the nation. They work hard to minimise the impact of taking clean water from the environment and returning used water after treatment. Individually and collectively, however, these activities can and do affect the ecological health of rivers and their catchments. They also affect how water can be used downstream by others. It is the role of the Environment Agency to police their work.

By far the greatest potential environmental impact from the water companies' activities is on the water and land environment. To regulate this impact, water companies have:

- abstraction licences which allow them to take water from the environment
- water discharge activity and groundwater activity permits which allow them to put treated waste water back into the environment
- permits or other regulatory controls which allow them to dispose of, or use, sludge or other waste
- duties to manage their impact on flood and coastal risk and the environment

The licences and permits we issue control the level of impact water companies are allowed to have on the environment. It is vital that they meet the conditions we set in their licences and permits and deliver their legal obligations.

We inspect water companies' sites, check sample data and respond to pollution incidents from their assets. We also work with the companies throughout the year to help them improve their performance. For example, auditing their monitoring data and working collaboratively with them on catchment management. Our role is both to regulate water companies, which we seek to do firmly and fairly, and to work in partnership with them on areas of mutual interest. Where appropriate we carry out enforcement activities. For 2017, these are summarised in the [Enforcement and sanctions section](#).

Environmental Performance Assessment

In 2011, we introduced the Environmental Performance Assessment (EPA) as a tool for comparing performance between water companies and across years. We revised it for use with 2016 to 2020 data.

The EPA indicators now measure performance associated with:

- reducing pollution incidents and increasing company reporting of incidents
- complying with discharge permits for sewage treatment and water treatment plants
- managing the use and disposal of sewage sludge
- delivering environmental improvement schemes
- delivering secure supplies of water ('security of supply')

The EPA is set for the duration of the current Asset Management Plan (AMP) period which runs from April 2015 to March 2020. The indicators are absolute rather than relative. All companies should therefore be able to achieve good performance against these by 2020 or before. The EPA for 2017 is shown in [Table 1](#).

The EPA forms part of a wider assessment of performance, including current year-to-date data, that we consider during annual performance meetings with the companies. This report summarises our findings for 2017, references the previous 5 years for the EPA ([see Annex 1](#)) and looks at longer term trends.

Table 1: Water and sewerage companies – Environmental Performance Assessment (EPA) 2017

Units	Indicators														Overall Performance Star Rating
	Pollution Incidents (sewerage)		Serious Pollution Incidents (sewerage)		Discharge Permit Compliance (STWs & WTWs)		Satisfactory Sludge Disposal		Self Reporting of Pollution Incidents		AMP National Environment Programme Delivery		Security of Supply Index (SoSI)		
	Category 1-3 incidents per 10,000 km of sewer		Category 1-2 incidents per 10,000 km of sewer		%		%		%		% of planned delivered		Above or below target		
Red, Amber, Green, thresholds	≥50 red		≥1.5 red		≤97 red		≤98 red		≤55 red		≤97 red		Above SoSI target (green)		
	>25 amber		>0.5 amber		<99 amber		>98 amber		<75 amber		>97 amber		With concerns (amber)		
	≤25 green		≤0.5 green		≥ 99 green		100 green		≥75 green		≥99 green		Below SoSI target (red)		
Water Company															
Anglian Water	30	↔	1.2	↔	98.6	↓↓	100	↔	71	↑	100	↔	100	↔	***
Northumbrian Water	17	↑↑	0.7	↑↑	96.0	↓↓	100	↔	80	↑↑	100	↔	100	↔	**
Severn Trent Water	30	↔	0.2	↑↑	99.6	↔	100	↔	80	↑	100	↔	100	↔	****
Southern Water	31	↑	1.0	↓	98.2	↓	100	↔	70	↓	100	↔	100	↔	***
South West Water	109	↑	1.9	↑	97.1	↓	100	↑↑	68	↑	100	↔	100	↔	**
Thames Water	28	↑	0.9	↔	99.5	↑↑	100	↔	73	↑	100	↔	97	↔	***
United Utilities	23	↔	0.1	↑	98.8	↑	100	↔	82	↑	100	↔	100	↔	****
Wessex Water	23	↔	0.9	↓	99.0	↓	100	↔	78	↑	100	↔	100	↔	****
Yorkshire Water	43	↑	0.8	↑	97.8	↑	100	↔	83	↑	100	↔	100	↔	***
Sector	31	↑	0.7	↑	98.6	↔	100	↑↑	76	↑↑	100	↔	99.7	↔	

Key - Status for Performance

	Performance better than target
	Performance close to or slightly below the target
	Performance significantly below target

Key – Performance star rating

****	Industry Leading Company
***	Good Company
**	Company Requires Improvement
*	Poor Performing Company

Key – Performance star rating

4 Star - 6 or more green metrics and no red metrics
3 Star - 3 or more green metrics and no red metrics
2 Star - 1 or 2 red metrics and/or 2 or less green metrics
1 Star - 3 or more red metrics

Key – Performance comparison to last year

↑	Improving within class	↓	Deteriorating within class
↑↑	Improved a class	↓↓	Deteriorated a class
↑↑↑	Improved by 2 classes, e.g. from red to green	↓↓↓	Deteriorated 2 classes, e.g. from green to red
↔	About the same		

Note: These results are drawn, in part, from information submitted by the companies and may change as a result of subsequent audits and checking

Performance expectations 2015 to 2020

In 2013, we set out to the water companies our expectations in a number of areas, including their operational performance. We give the full list of expectations in [Annex 2](#). Below are our expectations of companies that are directly relevant to the EPA. We expect:

- a plan in place to achieve 100% compliance for all licences and permits
- a reduction in category 1 and 2 pollution incidents, trending towards zero by 2020
- a trend to minimise all pollution incidents (category 1 to 3) by 2020 with at least a third reduction compared to 2012
- high levels of self-reporting of pollution incidents with at least 75% of incidents self-reported by 2020
- that management of sewage sludge treatment and re-use should not cause pollution and must follow the Sludge (Use in Agriculture) Regulations and the Code of Practice for Managing Sewage Sludge, Slurry and Silage or Environmental Permitting Regulations (EPR)
- environmental improvement schemes to be planned well and delivered as agreed (for example, Asset Management Plans and Water Resource Management Plans)
- security of supply outcomes to be achieved as defined in Water Resource Management Plans

The majority of water companies have translated our expectations into company performance commitments and associated Outcome Delivery Incentives (ODIs) for their 2015 to 2020 business plans. In 2017 we set out our performance expectations for 2020 to 2025 in the Water Industry Strategic Environmental Requirements (WISER). This will aid company business planning for the next AMP (2020 to 2025) by providing a steer on the environment, resilience and flood risk.

Environmental Performance Assessment for 2016 to 2020

For the performance period for 2016 to 2020, we tightened the EPA metrics and added the Security of Supply Index metric, measuring the availability of water for public supply. We made the changes to further encourage the companies to meet their legal obligations and our expectations. The 5 year period aligns with the investment cycle for water companies to make improvements. These investments, combined with operational good practice, can improve performance. The companies acknowledge the aims inherent in the EPA. They are reflected in the companies' own performance commitments to Ofwat (the economic regulator of the water companies) and some have set tighter standards. Because of the changes, the EPA for 2016 did not directly compare to the EPA for previous years.

Pollution incident performance

We expect companies to prevent and reduce pollution incidents, and work with them to minimise damage when these incidents occur. Incidents lead to the release of harmful substances into air, land or water, and some can cause significant harm to the environment. We categorise all incidents based on their impact. A category 1 incident has a serious, extensive or persistent impact on the environment, people or property and may, for example, result in a large number of fish deaths. Category 2 incidents have a lesser, yet significant impact. Category 3 incidents have a minor or minimal impact on the environment, people or property with only a limited or localised effect on water quality.

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Serious pollution incidents

In 2017, the number of serious pollution incidents (categories 1 and 2), reduced slightly to 52, compared to 57 in 2016, 59 in 2015 and 61 in 2014 (Figure 1). These 4 years saw an improvement following the disappointing performance in 2013 when the sector was the cause of 88 serious pollution incidents.

However performance has appeared to plateau, contrary to our expectations. In 2017, 5 companies had reduced numbers of serious pollution incidents compared to 2016.

However in 2017, we are disappointed to see another rise in category 1 incidents (the most serious) to 11, compared to 9 in 2016, after the lowest ever levels of 4 per year in 2014 and 2015. Ten were from waste water. We continue to press companies for better performance.

There is no common root cause of incidents. The main factors which contribute are inadequate monitoring and management, and shortcomings in risk assessment, operational practice and staff culture.

In 2017 we saw a large, unexpected rise in serious incidents from the clean water system (14 compared to 4 in 2016). We are working with the sector to improve performance and reporting.

Whilst serious incidents have declined from historic levels, we expect a trend to zero. Performance has plateaued in recent times and serious incidents are not declining fast enough. We expect companies to do more to protect the environment, with greater progress in 2018 and subsequent years. More stringent targets for 2020 to 2025 in WISER will influence company business planning and focus the companies on improving further.

Total pollution incidents

The total number of water quality pollution incidents (categories 1, 2 and 3) in 2017 was 1,827. This was a slight reduction on 1,902 in 2016 but not as low as 1,742 in 2015 (Figure 2). Such incidents had risen steadily between 2008 and 2012 then reduced each year to a low in 2015. It is disappointing to not see a greater reduction in 2017.

Performance varied between companies with 3 of the 9 companies' performance not improving for total incidents between 2016 and 2017.

We require companies to have effective pollution reduction plans in place that are sufficiently ambitious and achieve timely results to meet our expectations. We held a productive workshop with companies in

Figure 1. Numbers of serious pollution incidents and trend for the 9 water companies 2005 to 2017

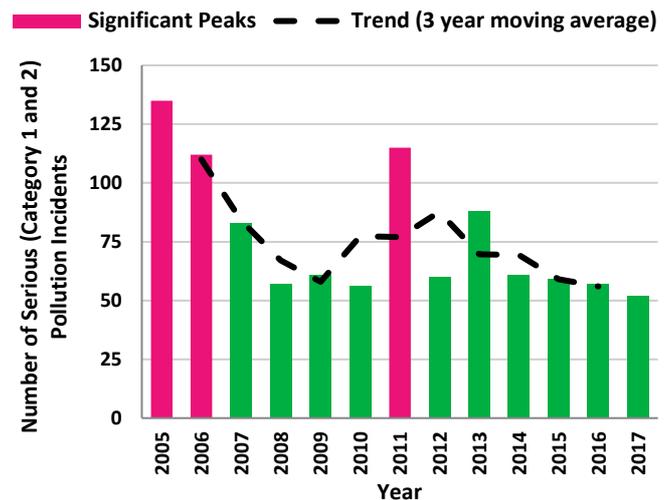
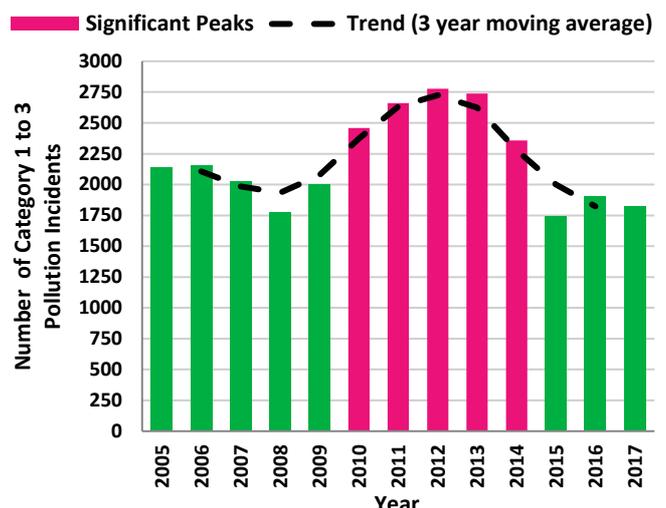


Figure 2. Numbers of category 1 to 3 pollution incidents and trend for the 9 water companies 2005 to 2017



December 2017, where good practice was shared across the sector. We want to see robust self-reporting and further reductions in incidents.

Self-reporting of incidents

Without a rapid response, relatively minor events can escalate and the opportunity for mitigation measures is often lost. This is why we seek high levels of self-reporting of incidents, where water companies tell us about their incidents before a member of the public or third party does.

Pleasingly, in 2017, we saw the highest ever level of self-reporting of pollution incidents by the sector at 76%, up from 72% in 2016 and 69% in 2015. Eight of the 9 companies improved and the variation across companies in this measure remained at 15%, the same as in 2016 when it had improved markedly from the previous year, as poorer performers caught up. For 2017, the range was from 83% down to 68%. We expect all companies to reach 75% self-reporting by 2020, and at least 80% by 2025.

Compliance with licences and permits

All water companies have licences and permits to control the level of impact they are allowed to have on the environment. These vary in complexity depending on the activities concerned and the nature and sensitivity of the local environment. We set these conditions carefully and so expect companies to be 100% compliant with them. The EPA compliance metric covers water treatment works (WTW) and sewage treatment works (STW).

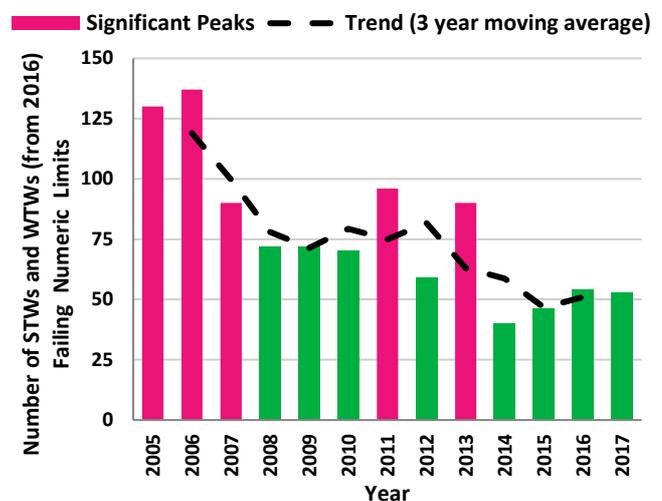
Overall compliance with STW and WTW permits in 2017 was 98.6% (53 works out of a total of 3,825 failing to comply with numeric permit conditions). There were more non-compliant STW in 2017 (40) than in 2016 (34). This is an improvement compared to 46 in 2015 and the same as 40 in 2014 (Figure 3). Four companies achieved the same or better compliance with numeric discharge permits at STW in 2017 compared with 2016.

Overall, WTW compliance improved in 2017 compared to 2016 (13 failing permits compared to 20), and 3 companies had 100% compliance with the numeric discharge conditions for WTW permits. Improvement is needed as sector compliance is only 95%. As with waste water from STW, adequate treatment of dirty water from WTW is essential to ensure the receiving environment is not polluted.

The water companies achieved 98.1% compliance with water abstraction and impoundment licences, resulting in written warnings or advice and guidance letters to the licence holders. None of the non-compliances caused environmental impacts.

Water companies operate a variety of waste facilities ranging from biowaste treatment, landfill, biogas combustion, sludge incineration and transfer stations. They hold 262 permits for waste operations and a further 416 registered exemptions for waste treatment. We assess compliance and use the Operational Risk Appraisal (OPRA) to classify good or poor performance. We consider operators in compliance bands D, E and F as poor performers. During 2017, 3 permitted operations were assessed as poor and in compliance band D. We required management systems, staffing, infrastructure and emergency plan improvements for those operators. There were 3 serious (category 2) incidents reported involving breaches for staff technical competence, management systems and inadequate infrastructure and containment. A

Figure 3. Number of Sewage Treatment Works (and from 2016 including Water Treatment Works) failing numeric limits and trend for the 9 water companies 2005 to 2017



further 10 minor impact (category 3) incidents were reported, mostly for releases of biogas. We continue to work with companies to reduce environmental impacts and improve regulatory consistency. We have not compared 2017 performance with 2016, as a broader set of waste activities has been assessed in 2017.

Sludge disposal and use

All water companies produce sludge as part of their sewage treatment processes. This sludge needs to be disposed of and can often be put to good use, for example as a fertiliser on agricultural land. Its storage and spreading, however, requires careful control as misuse can result in damage to the environment. We work with water companies to make sure they and their contractors understand the rules and regulations around sludge.

A revised definition of the metric for satisfactory sludge disposal and use has been agreed for use in the EPA for reporting 2018 data to 2020 inclusive. We are working with the sector to set out the compliance assessment methodology. For 2016 and 2017 data, we are using the existing definition.

In 2017 all companies reported 100% for the EPA metric, an improvement on 2016.

Progress with environmental improvement schemes

In 2014, Ofwat set the prices that water companies could charge their customers between 2015 and 2020. As part of that price review we developed the National Environment Programme (NEP).

The NEP sets out the environmental improvements the water companies need to make over that period, to make sure they meet European and national environmental standards related to water. The NEP, within each company's AMP, includes schemes, investigations and monitoring to improve and protect the environment.

Bathing water quality, has improved significantly over the past 3 decades as a direct result of investment by water companies and work by other stakeholders. The majority of our bathing waters are very high quality and further investment is planned. Similarly, investment by water companies has resulted in thousands of kilometres of river water quality being improved benefiting people, economic growth and wildlife.

This EPA reports on the cumulative 3 year progress companies have made against their plans up to the end of March 2018. It includes schemes associated with water resources, fisheries, biodiversity and geomorphology. For the year April 2017 to March 2018, all companies reported 100% delivery of planned schemes.

Security of water supply

The EPA includes the Security of Supply Index (SoSI). The metric compares forecast water available for supply with actual customer demand. Expected performance is for companies to have a balance or a small surplus of water available when compared with demand (scoring a SoSI of 100).

For 2017/2018, 8 of the 9 companies reported a score of 100 and green status in the EPA. One company reported 97 and amber status due primarily to failed leakage targets, with ongoing work to achieve leakage reduction targets in 2018/2019. We see control and reduction of leakage as a fundamental component of Water Resource Management Planning.

Water resources planning

Since the restoring sustainable abstraction (RSA) programme began in 2008, we have delivered 92 water company licence changes, and have 73 left to deliver by 2020 when the RSA programme closes. We served notice to change one water company licence under RSA in 2017.

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To date we have:

- returned over 13 million cubic metres of water per year to the environment
- reduced the risks posed by abstraction for a further 42 million cubic metres per year through the removal of unused quantities from abstraction licences

All water companies report annually on progress with implementing their Water Resource Management Plans (WRMPs). We review these and report our findings to Defra. For the period April 2016 to March 2017, we found that household metering increased from just over 47% in the year 2015/16 to 51% in 2016/17. However, for the period April 2016 to March 2017, a number of water companies reported a lower level of household meter penetration than planned.

Average household per capita consumption was 133 litres/head/day in 2016/17, reduced from 136 litres/head/day the previous year. We would like to see water use in England fall and support work to set an ambitious personal consumption target as set out in the government's 25 year environment plan.

Leakage remained fairly stable, although for some companies this was higher than they had forecast. Ofwat has set a target for all companies to meet a 15% reduction in leakage by 2024/25. We think companies should also explore innovative approaches to reduce leakage in line with the recent National Infrastructure Commission's report on England's Water Infrastructure Needs.

Flood and coastal risk management

Between April 2017 and March 2018, water companies invested:

- £92 million to reduce the risk of sewer flooding to properties
- £111 million to maintain the public sewer system to prevent blockages and flooding
- £4.5 million in property-level protection and mitigation measures to reduce the likelihood of customers' homes experiencing sewer flooding

Under the Flood and Water Management Act 2010, water companies are risk management authorities (RMAs). This means they have to act in a manner consistent with the National Flood and Coastal Erosion Risk Management Strategy for England and have a duty to cooperate with other RMAs. In 2017 to 2018 water companies have:

- shared data with other RMAs to support flood risk assessments and produce integrated drainage models to better understand the risk of flooding
- identified opportunities for sustainable drainage solutions
- delivered co-funded partnership solutions to reduce flood risk to communities and enhance the environment
- enhanced the resilience of their networks and services to flooding
- developed their own drainage strategies and engaged with partners on their Price Review 2019 plans and future investment needs

Companies have continued to work with partners on flood risk action plans to improve community and infrastructure resilience since the winter 2015 to 2016 flooding. A number of companies have been piloting the use of their reservoirs for flood storage to reduce the risk of flooding to communities. This innovation is only possible in certain circumstances and managed through operational agreements.

Companies have worked with the wider water sector to develop tools and approaches that will improve their resilience to flooding and strengthen their environmental performance.

In 2017 Water UK's 21st Century Drainage Programme published the Capacity Assessment Framework and the Storm Overflow Benefits Evaluation Framework, which was jointly funded by the Environment

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Agency. These tools assess the capacity of sewer networks to cope with the threat of flooding and pollution from future rainfall and growth.

Enforcement and sanctions

We seek to be a firm and fair regulator. Where an offence has been committed, such as a pollution incident or breach of permit, we may consider taking enforcement action or imposing a sanction. We can prosecute when there is evidence of significant environmental risk or harm combined with deliberate, reckless or negligent levels of culpability. We may consider other options where the incident has occurred as a result of a genuine accident or a company has done all it can to minimise the impact of the incident and prevent reoccurrence. We make decisions in the public interest based on the Environment Agency [enforcement and sanctions policy](#).

The formal options we have include a written warning, enforcement notices, issuing a formal caution, prosecution or considering a civil sanction. A formal caution is the written acceptance by an offender that they have committed an offence, which as a recorded criminal sanction, will be produced in court if there are further offences.

Our flexible approach to sanctions enables us to choose options that can achieve environmental outcomes. Since 2011, we have been able to accept or reject an enforcement undertaking (EU) offer, a civil sanction, which is a voluntary agreement offered by those who have committed an offence that becomes legally binding once accepted. The EU offer must contain measures to restore any environmental harm done, as well as steps to make sure of future compliance, such as long-term investment in environmental management systems. EUs should encourage legitimate business operators to make amends, come into compliance and prevent recurrence. In particular circumstances they allow a quicker resolution than a prosecution. They help offenders who are prepared to take responsibility for their actions to put things right voluntarily, working with their local communities. Prosecution gives the courts considerable scope to punish offenders and to deter others.

Gathering data and investigating events takes time and so enforcement activity can conclude some months or years after the original offence occurred. As a result, enforcement activity, in any one calendar year, is not necessarily directly related to offences in that year. The numbers of prosecutions varies per year due to many factors. Variations in the size of fine occur due to a number of factors that relate to the seriousness of the harm, the culpability and the means of the offender and the aggravating and mitigating factors. The Sentencing Council Environmental Offences Definitive Guideline was published for use by the courts from 1 July 2014 and has resulted in significantly higher fines for the water companies.

In March 2017, Thames Water was ordered to pay fines of almost £20 million following a series of significant pollution incidents on the River Thames and its tributaries in 2012 to 2014. The fine, for 6 separate cases, was a record as the highest ever set by the courts in a prosecution brought by the Environment Agency.

Three other water companies were also prosecuted by the Environment Agency in 2017 (a total for all water companies of 16 cases, [Table 2](#)). Fines for these other cases ranged from £10,000 to £666,000. The prosecutions in 2017 were mostly related to sewage treatment works, but also included offences relating to pumping stations and combined sewer overflows.

Eight formal cautions were accepted by 5 companies in 2017, compared to 12 in 2016, and 22 in 2015. We accepted 15 Enforcement Undertakings (EU) totalling more than £1.4 million for offences by 6 companies. This number and value of EUs is a substantial increase on the previous years. The 3 largest EUs, all from Thames Water, each funded over £200,000 of improvement works. We are working with Thames Water to improve performance and reduce the need for enforcement and sanctions.

Enforcement and sanctions should help deter operators from committing further offences in the future. As a modern regulator, we also use 'earned recognition' to encourage and recognise better performance. This

involves approaches that promote innovation, and lighter touch regulation for those companies who consistently perform well.

Table 2. Enforcement and sanctions for the 9 water companies 2015 to 2017

Year	Number of prosecution cases	Value of prosecution Fines	Number of cases receiving formal caution	Number of enforcement undertakings	Value of enforcement undertakings
2015	9	£2,494,500	22	0	£0
2016	10	£6,560,000	12	4	£610,000
2017	16	£21,589,334	8	15	£1,435,900

Partnerships and innovation

Where companies comply with regulation and demonstrate good performance we seek to work with them to promote partnerships and innovation. We use influence, advice and other complementary approaches wherever possible to achieve more environmental outcomes which can reduce the regulatory burden on water companies. For example, we have been working with water companies to develop the storm overflow assessment framework.

Storm overflow assessment framework

Combined sewer overflows (CSOs), where storm sewage is released to the environment, are an essential part of our combined sewerage systems. They serve our towns and cities to help reduce flooding of properties. There are over 15,000 CSOs in England. There is a balance between CSO spill performance impact on the environment, flooding and the cost of reducing spills.

Since privatisation of the water industry over half of the CSOs in England have been improved by water and sewerage companies to meet environmental needs. This reactive approach over the years has been very successful, for example improving bathing water quality.

However, public, stakeholder and regulatory expectations have not stood still, nor have the physical pressures on sewerage such as growth and climate. This is evidenced by research, media coverage, and our direct engagement with customers and stakeholders.

Together, we have developed the storm overflow assessment framework (SOAF). The SOAF enables CSOs to be prioritised for assessment based on spill frequency. The environmental impact of frequently spilling CSOs is considered, as well as the wider socio-economic benefits of potential spill reduction. In parallel, we have developed a CSO specific cost benefit appraisal (CBA) framework, under the Water UK led 21st Century Drainage Programme. This is allowing the benefits of spill reductions to be monetised. CSOs whose spill reduction is cost beneficial will be prioritised for investment.

This work will ensure a consistent approach to prioritising CSO spill reduction to complement the already successfully proven approach of triggering improvement based on environmental impact. The new approach provides the opportunity to identify, assess and if appropriate resolve frequently spilling CSOs before they deteriorate to the point that they have a significant environmental impact.

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Conclusions and forward look

This year, we are encouraged by the performance of several companies. They continue to deliver 'leading' or 'good' performance. Water companies have made welcome improvements over time. However, the government's [25 Year Environment Plan](#) sets out the goal to achieve cleaner and more plentiful water. With a growing population and climate pressures on the water environment, and increased public and legal expectation, water companies need to further rise to the challenge and improve promptly. We will work with and regulate the companies to help achieve a better environment, especially those 2 companies that are rated as 'requires improvement'. Yet it is the responsibility of companies to deliver these improvements that we expect. We expect good practice sharing and will continue to encourage continuous improvement across the sector. In particular we wish to see a concerted reduction in the most serious pollution incidents and better compliance with permits.

Annex 1: History of EPA results

Water and sewerage companies – Environmental Performance Assessment (EPA) 2016

	Pollution incidents (sewerage)	Serious pollution incidents (sewerage)	Discharge permit compliance	Satisfactory sludge disposal	Self-reporting of pollution incidents	AMP National Environment Programme delivery	Security of Supply Index (SoSI)	Overall performance rating
Anglian Water	Yellow	Yellow	Green	Green	Yellow	Green	Green	***
Northumbrian	Yellow	Red	Yellow	Green	Yellow	Green	Green	**
Severn Trent Water	Yellow	Yellow	Green	Green	Yellow	Green	Green	***
Southern Water	Yellow	Yellow	Green	Green	Yellow	Green	Green	***
South West Water	Red	Red	Yellow	Yellow	Yellow	Green	Green	**
Thames Water	Yellow	Yellow	Green	Green	Yellow	Green	Red	**
United Utilities	Green	Green	Yellow	Green	Green	Green	Green	****
Wessex Water	Green	Yellow	Green	Green	Green	Green	Green	****
Yorkshire Water	Yellow	Yellow	Yellow	Green	Green	Green	Green	***

Water and sewerage companies – Environmental Performance Assessment (EPA) 2015

	Pollution incidents (sewerage)	Serious pollution incidents (sewerage)	Discharge permit compliance	Satisfactory sludge disposal	Self-reporting of pollution incidents	AMP National Environment Programme delivery	Overall performance rating
Anglian Water	Green	Yellow	Green	Green	Yellow	Green	***
Northumbrian Water	Yellow	Yellow	Green	Green	Yellow	Green	***
Severn Trent Water	Green	Green	Green	Green	Yellow	Green	****
Southern Water	Yellow	Yellow	Green	Green	Yellow	Green	***
South West Water	Red	Red	Red	Yellow	Yellow	Green	*
Thames Water	Green	Yellow	Green	Green	Yellow	Green	***
United Utilities	Green	Green	Yellow	Green	Green	Green	****
Wessex Water	Green	Yellow	Green	Green	Yellow	Green	****
Yorkshire Water	Yellow	Yellow	Green	Green	Green	Green	***

Water and sewerage companies – Environmental Performance Assessment (EPA) 2014

Anglian Water	Yellow	Yellow	Green	Green	Yellow	Green	***
Northumbrian Water	Yellow	Yellow	Green	Green	Yellow	Green	***
Severn Trent Water	Yellow	Yellow	Green	Green	Yellow	Green	***
Southern Water	Red	Red	Green	Green	Yellow	Green	**
South West Water	Red	Yellow	Yellow	Yellow	Yellow	Green	**
Thames Water	Yellow	Yellow	Yellow	Green	Yellow	Green	***
United Utilities	Green	Green	Yellow	Green	Green	Yellow	***
Wessex Water	Green	Yellow	Green	Green	Yellow	Green	***
Yorkshire Water	Yellow	Green	Green	Green	Green	Green	****

Water and sewerage companies – Environmental Performance Assessment (EPA) 2013

Anglian Water	Yellow	Yellow	Green	Green	Yellow	Green	***
Northumbrian Water	Yellow	Yellow	Green	Green	Yellow	Green	***
Severn Trent Water	Yellow	Green	Green	Green	Yellow	Green	****
Southern Water	Red	Red	Red	Green	Yellow	Green	*
South West Water	Red	Red	Yellow	Yellow	Yellow	Green	*
Thames Water	Yellow	Yellow	Red	Green	Yellow	Green	**
United Utilities	Green	Green	Yellow	Green	Green	Green	***
Wessex Water	Green	Yellow	Green	Green	Yellow	Green	***
Yorkshire Water	Yellow	Yellow	Yellow	Green	Green	Green	***

Water and sewerage companies – Environmental Performance Assessment (EPA) 2012

Anglian Water	Yellow	Green	Yellow	Green	Yellow	Green	***
Northumbrian Water	Yellow	Yellow	Green	Green	Yellow	Green	***
Severn Trent Water	Yellow	Yellow	Green	Green	Yellow	Green	***
Southern Water	Red	Red	Yellow	Green	Yellow	Green	**
South West Water	Red	Red	Yellow	Yellow	Yellow	Green	**
Thames Water	Yellow	Yellow	Green	Green	Yellow	Yellow	***
United Utilities	Yellow	Green	Yellow	Green	Green	Green	***
Wessex Water	Green	Green	Green	Green	Yellow	Green	****
Yorkshire Water	Yellow	Yellow	Red	Yellow	Green	Green	**

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Annex 2: Expectations for operational performance 2015 to 2020

In 2013, following Ofwat's publication of its final methodology for developing business plans, we wrote to all water companies setting out our expectations on a range of areas. This annex repeats the expectations around operational performance.

Protecting the environment

1. A plan in place to achieve 100% compliance for all licences and permits.
2. Look up table permits for water quality discharges should be 100% compliant.
3. Compliance with flow requirements, including MCERTS certification, at Waste Water (sewage) Treatment Works.
4. Reducing serious (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.
5. Trend to minimise all pollution incidents (category 1 to 3) by 2020. There should be at least a third reduction compared to numbers of incidents recorded in 2012.
6. Restored sustainable abstractions outcomes are achieved.
7. Management of sewage sludge treatment and re-use should not cause pollution and must follow the Sludge (Use in Agriculture) Regulations and the Code of Practice for Managing Sewage Sludge, Slurry and Silage or Environmental Permitting Regulations (EPR).
8. High levels of self-reporting of pollution incidents. At least 75% of incidents self-reported by 2020.
9. Environmental improvement schemes (eg Asset Management Plan, Water Resource Management Plans) are planned well and delivered as planned.
10. Effective management of transferred private sewers and pumping stations with low levels of pollution incidents.
11. No D, E, or F rated sites under OPRA for waste related sewerage service Environmental Permitting Regulations permits.
12. Sample and provide data in relation to self-monitoring under Operator Self-Monitoring (OSM) and Urban Waste Water Treatment Directive (UWWTD).
13. Act in a manner consistent with the National Flood and Coastal Erosion Risk (FCERM) Strategy for England, when carrying out FCERM functions.
14. By 2020, the vast majority of storm discharges should have event duration monitoring. The discharges that require monitoring will be determined by a risk based methodology that is currently being developed. The required monitoring will be proportionate depending on the sensitivity of the receiving water and frequency of operation.

Sustainable management of drainage and surface water

15. Mapping of assets and application of the Drainage Strategy Framework (priority catchments by 2020) combined with comprehensive, monitoring, and management of key assets by 2020.
16. A comprehensive maintenance programme for networks and sewage treatment works.
17. A targeted programme of capital maintenance.
18. Reduced sewer flooding of properties, trending to zero.
19. Work in partnership with lead local flood authorities to deliver value for money sustainable solutions that reduce flood risk.

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Security of supply

20. Delivery of Water Resources Management Plans (WRMPs).
21. Achieve security of supply outcomes as defined in WRMPs.
22. Achieve at least the sustainable economic level of leakage.
23. Universal metering in water stressed areas where your WRMP appraisal supports that.
24. All outstanding actions on drought plans are resolved and completed.