National Audit Office

Understanding storm overflows: Exploratory analysis of Environment Agency data

September 2021

This document presents insights we have drawn from exploratory analysis of data used by the Environment Agency as part of its regulation of storm overflows. The purpose of this document is to provide contextual data to support the Environmental Audit Committee's inquiry into water quality in rivers and set out areas for further consideration.

We are the UK's independent public spending watchdog

Understanding storm overflows: Exploratory analysis of Environment Agency data

Contents

The National Audit Office (NAO) scrutinises public spending for Parliament and is independent of government and the civil service. We help Parliament hold government to account and we use our insights to help people who manage and govern public bodies improve public services. The Comptroller and Auditor General (C&AG), Gareth Davies, is an Officer of the House of Commons and leads the NAO. We audit the financial accounts of departments and other public bodies. We also examine and report on the value for money of how public money has been spent. In 2019, the NAO's work led to a positive financial impact through reduced costs, improved service delivery, or other benefits to citizens, of £1.1 billion.

If you would like to know more about this work, please contact:

Keith Davis
Director, Value for Money

Keith.Davis@nao.org.uk
020 7798 7284

Ruth Kelly
Chief Analyst, Analysis Hub

Ruth.Kelly@nao.org.uk
0207 7798 7487

If you are interested in the NAO's work and support for Parliament more widely, please contact:

Parliament@nao.org.uk
020 7798 7665

Design & Production by NAO External Relations ● DP Ref: 010856-001

Introduction: The focus of this work

We have carried out exploratory analysis on the data collected by the Environment Agency (EA) to inform the Environmental Audit Committee's understanding of storm overflows.

Scope of this document

This document presents insights we have drawn from exploratory analysis of data used by EA as part of its regulation of storm overflows. The purpose of this document is to provide contextual data to support the Environmental Audit Committee's inquiry into water quality in rivers and set out areas for further consideration. At the end of each section within this document we have listed the points for further consideration by the Committee. We set out:

- insights from the monitoring of spills from storm overflows;
- how this relates to the amenity of the receiving waterbody;
- insights from pollution incidents from storm overflows reported to EA; and
- summaries of water quality sampling, enforcement actions against water companies and EA's income and funding

Further data collected by water companies and other bodies such as Ofwat not used by EA falls outside the scope of this work.

Our evidence base

In compiling this work we drew on information and data from EA. We also consulted the Department for Environment, Food & Rural Affairs. The data we have used and our methodology is set out in Appendix One.

Introduction: Storm overflows

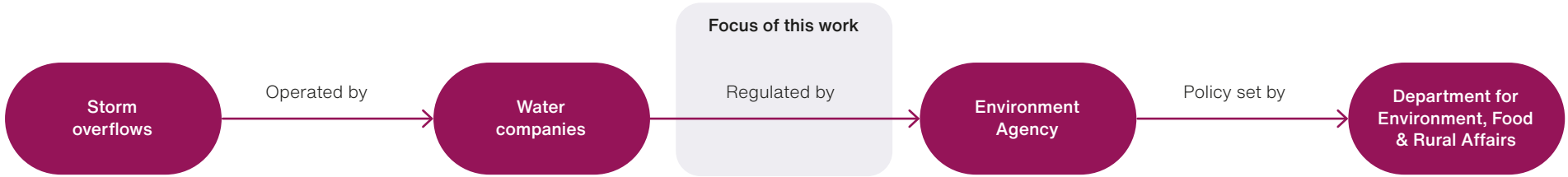
As the environmental regulator, one of the Environment Agency's (EA's) roles is to regulate the use of storm overflows by water companies.

Storm overflows, also known as 'sewer overflows', can have an impact on the water quality in the water bodies they discharge into, which include rivers, lakes, beaches and groundwater. This is in addition to pollution from other sources such as agricultural activities, manufacturing and sewage treatment works.

The Environment Agency (EA) acts as the environmental regulator in England and is responsible for the water quality of rivers and coastal areas.

As part of this role the EA regulates the discharge of liquids and waste into water bodies by private companies, including via storm overflows (**Figure 1**). This is done through permits issued by the EA for storm overflows that specify when they can be used as well as how they should be monitored and maintained.

Figure 1: Operational context of storm overflow management



Source: Environment Agency

Introduction: What is a storm overflow?

Storm overflows play an important role in preventing sewage flooding land, homes and businesses when the sewer network is overloaded by surface water runoff during wet weather.

A storm overflow is an outlet in the sewage network designed to relieve pressure by diverting some of the flow into the environment, in most cases a river or other watercourse, once a certain level has been reached in the sewer.

This helps prevent sewer flooding, whereby sewage can leak through drains on to the street or into homes when a sewer reaches its maximum capacity. This happens most often when sewers are inundated by surface runoff during wet weather.

A combined sewer overflow is an outlet on a combined sewer, in which wastewater from properties is mixed with surface runoff: for example, from streets and roof drainage. Storm overflows providing the same function can also be located at treatment works or pumping stations, although sewage treatment works will often use tanks to act as a buffer when the incoming flow rate exceeds capacity and then use a storm overflow when these are filled.

Material spilling from storm overflows bypasses sewage treatment, only passing through a screen to remove large solids, and can cause damage to the environment if concentrations of pollutants are high enough for the periods of time that they discharge.

The Environment Agency (EA) issues permits to water companies to use the storm overflows on their networks during periods of wet weather when rain enters the combined sewers and causes spills from storm overflows when capacity is reached. The permits also specify the maximum size of solids that can be released, requiring a screen to be maintained on the outlet plus a minimum storage capacity before the outlet is used.

The use of overflows during periods of dry weather is considered a breach of permit. It is the EA's role to investigate these cases and take action, if required.

Spills during dry weather are predominately caused by blockages in the sewer network. When this happens, sewage is not diluted by rainwater and is much more likely to cause damage to the environment.

Event duration monitors: Context

Event duration monitors provide a way for water companies to monitor when a storm overflow is spilling and for how long, for annual reporting to the Environment Agency (EA).

In 2013, the Environment Minister told water companies that they should introduce monitoring for the vast majority of their storm overflows by 2020. In 2020, monitors were installed on over 12,000 of the roughly 15,000 storm overflows in England.

The permits issued by the EA now require water companies to install event duration monitors to overflows which will report on the frequency and duration of their use.

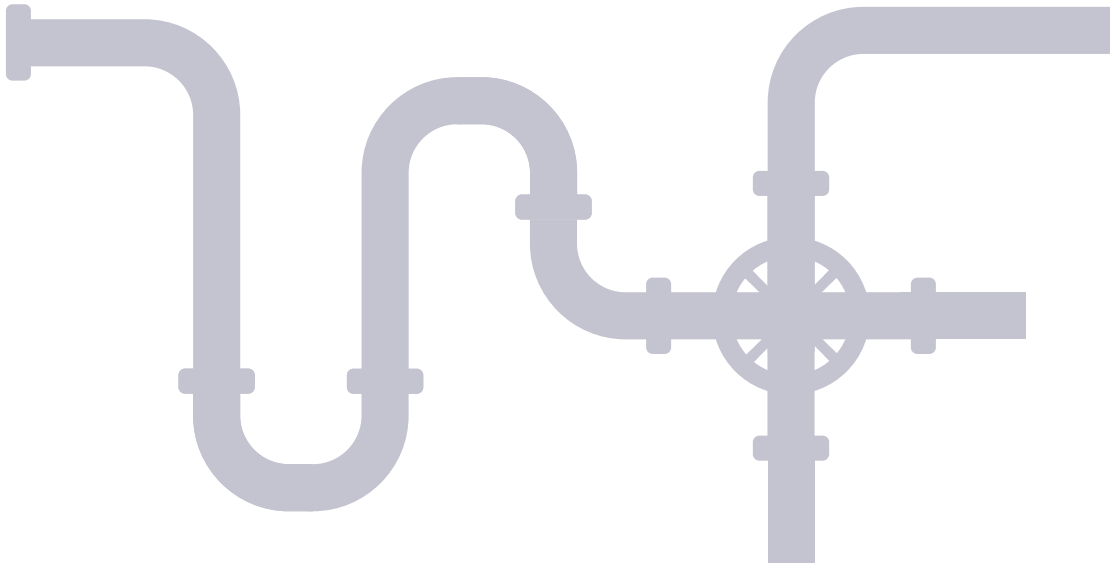
Water companies submit an annual return for all their monitored overflows. The EA then uses this to identify for investigation overflows that frequently spill. It is expected that water companies should be investigating frequent spillers as part of their operation of them.

Monitoring requirements vary slightly depending on the amenity value of the receiving watercourse: see slide 10 for more information about amenity. High-amenity sites, such as where bathing and water contact sport occur, require monitoring at two-minute intervals plus the provision of telemetry, which can facilitate near real-time monitoring, whereas moderate amenity sites require monitoring at 15-minute intervals, with no requirement for telemetry. Initially, there were no monitoring requirements for low- or non-amenity sites.

In January 2021, the Environment Minister announced that monitoring would be required for all storm overflows, adding requirements to low- and non-amenity sites.

Most monitors only provide information on the frequency and duration of spills. This information alone is not enough to determine environmental impact. Information on the volume of flow and concentration of pollutants gives a more complete picture of the situation but is more challenging to collect.

Water companies will use the spill frequency from monitors as a trigger to prioritise which overflows to investigate further to determine the environmental impact.



Event duration monitors: Coverage

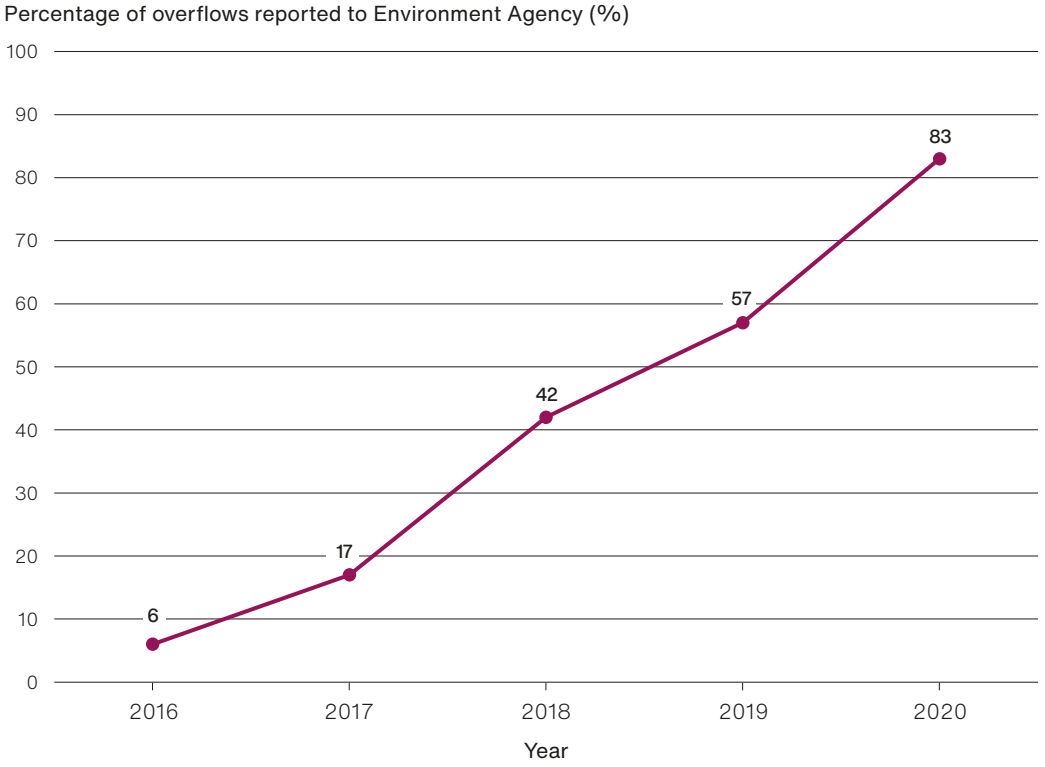
Over the past five years, the proportion of storm overflows with event duration monitors reported to the Environment Agency (EA) has risen greatly, with full coverage expected by 2023. Anglian Water lags behind the other water companies.

Over the past five years, the proportion of overflows with monitoring information reported to the EA has increased steadily from around 6% in 2016 to over 80% in 2020. Following the January 2021 announcement by the Environment Minister, the EA expressed the expectation for all overflows to be monitored by the end of 2023 (see **Figure 2**).

By last year, all the water companies except Anglian Water had submitted returns for at least three-quarters of their overflows (see **Figure 3**).

The EA told us that Anglian Water's lag in providing event duration monitor data is partly due to the company having a large proportion of its overflows in low-amenity areas, with no monitoring requirements until January 2021; 54% of Anglian's overflows initially had no monitoring requirements, compared with 15% across all sewage companies. The EA indicated that Anglian would now need to catch up with the other companies to achieve full coverage in 2023. We were told by Anglian Water that they would achieve this.

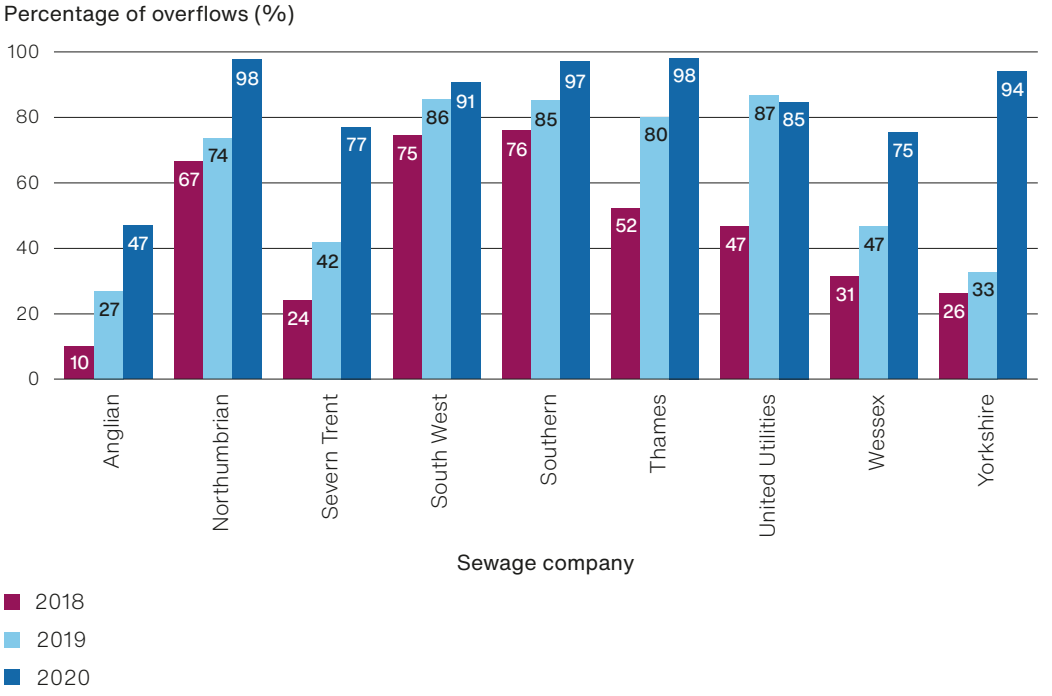
Figure 2: Percentage of overflows with monitoring submitted to the Environment Agency, 2016–2020



Note: Coverage is based on the total number of storm overflows in 2020.

Source: National Audit Office analysis of Environment Agency data

Figure 3: Percentage of overflows with monitoring submitted to the Environment Agency by company



Note: Coverage is based on the total number of storm overflows in 2020.

Source: National Audit Office analysis of Environment Agency data

Event duration monitors: Average number of spills

The last five years have seen an increase in both the number of monitors and the proportion of overflows spilling more than 50 times per year. This is due to an increase in the average number of spills per year, across overflows with both new and existing monitors.

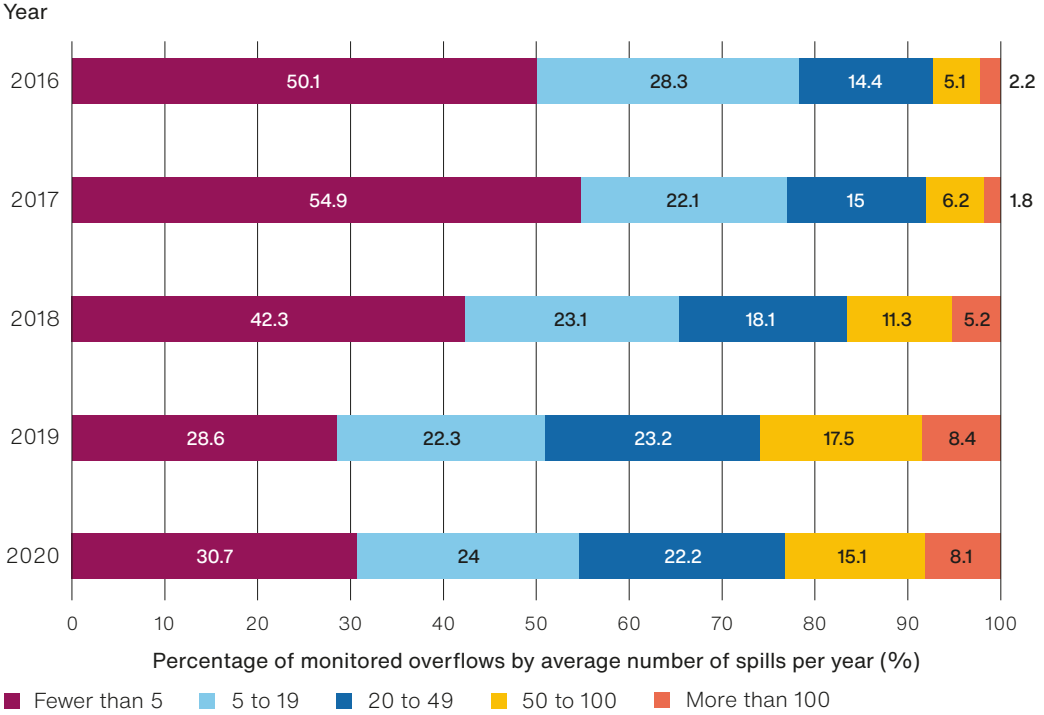
Over the past five years, the proportion of overflows spilling 50 times or more in a year has increased from 7% in 2016 to 17% in 2018 and 23% in 2020 (see **Figure 4**).

This increase is partly because newly monitored overflows have spilled more on average than overflows that already had monitors installed. However, there is also a trend of an increasing number of spills from existing monitors (**Figure 5**).

Annual rainfall plays a part in the total number of spills occurring because wetter years see more wet weather spills on average than drier years.

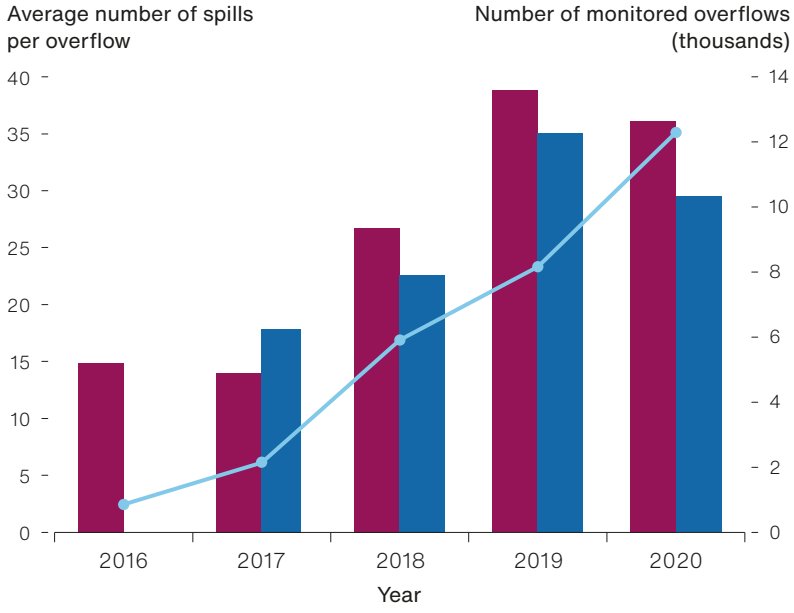
The Environment Agency told us that, when deciding where to install additional monitoring devices, water companies are expected to prioritise high significance overflows first, before fitting them on lower significance ones. This is explained on page 10.

Figure 4: Percentage of overflows by average number of spills per year, 2016–2020



Source: National Audit Office analysis of Environment Agency data

Figure 5: Average number of spills per overflow, comparing newly added monitors each year to exisiting, 2015–2020

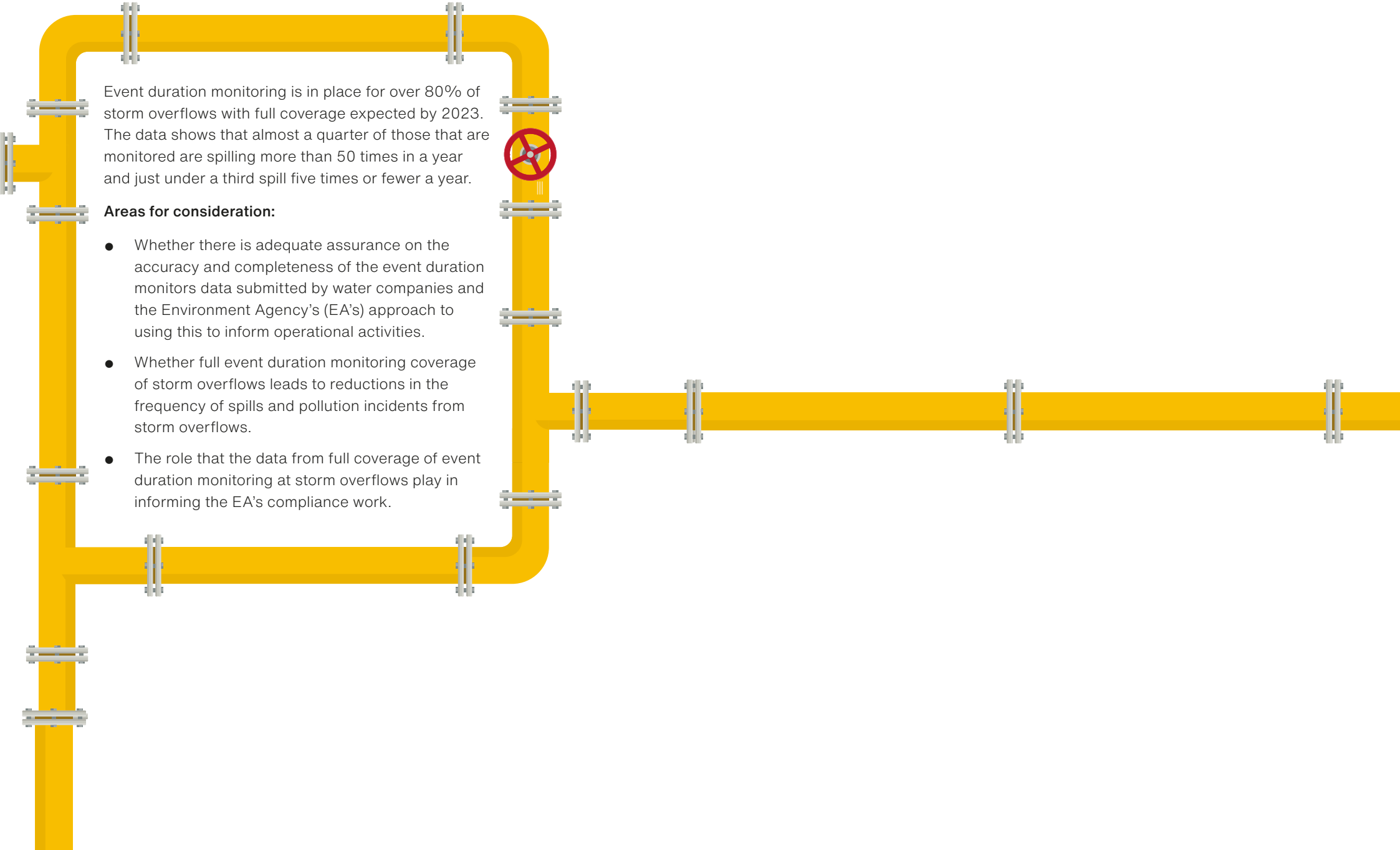


	2016	2017	2018	2019	2020
New	14.9	14	26.7	38.8	36.1
Existing	0	17.9	22.6	35.1	29.5
Total monitored overflows	**855**	**2,145**	**5,906**	**8,160**	**12,286**

Note: We did not receive returns from the Environment Agency (EA) for all companies for 2016 and 2017. The EA confirmed requirements for data provision in 2018 and all companies submitted returns in this format from 2018 onwards. Prior to this, five (2016) and six (2017) out of nine companies submitted returns in this format, while some of the others submitted returns in different formats that were not comparable.

Source: National Audit Office analysis of Environment Agency data

Event duration monitors: Areas for consideration



Event duration monitoring is in place for over 80% of storm overflows with full coverage expected by 2023. The data shows that almost a quarter of those that are monitored are spilling more than 50 times in a year and just under a third spill five times or fewer a year.

Areas for consideration:

- Whether there is adequate assurance on the accuracy and completeness of the event duration monitors data submitted by water companies and the Environment Agency's (EA's) approach to using this to inform operational activities.
- Whether full event duration monitoring coverage of storm overflows leads to reductions in the frequency of spills and pollution incidents from storm overflows.
- The role that the data from full coverage of event duration monitoring at storm overflows play in informing the EA's compliance work.

Amenity value: Context

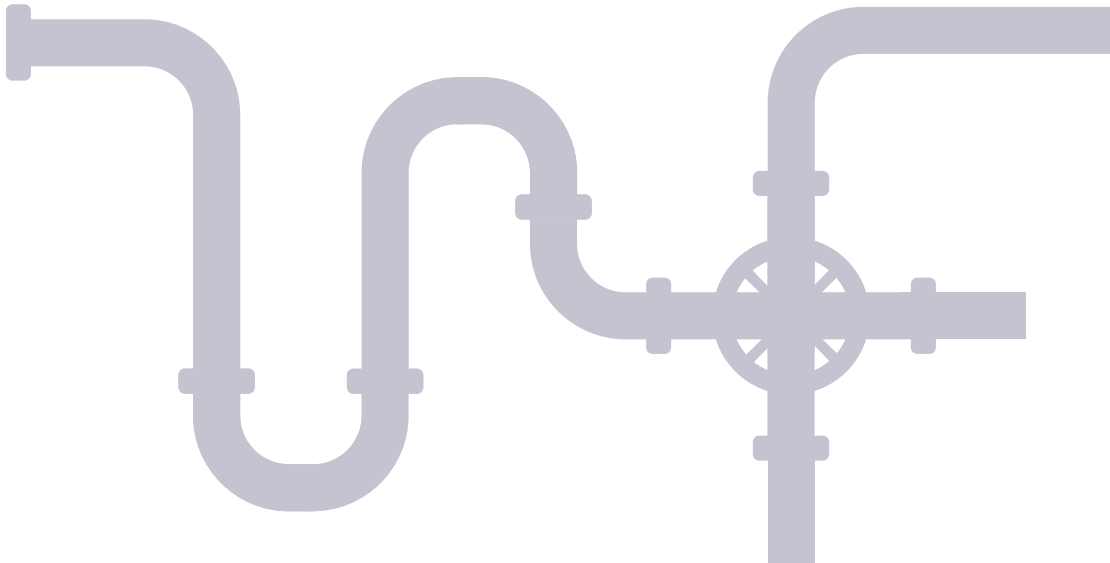
The amenity value of a watercourse is a representation of how it is used and how much it is used by the public. High-amenity sites can be used for water sports or have a protected status, while low-amenity sites will see much more limited use by the public.

In 2014, water companies were required to assess the amenity value of the watercourse that each storm overflow discharges into. This was then assessed against its estimated number of annual spills to give the significance and monitoring requirements of the overflow for the initial programme of monitors.

High-significance overflows require monitoring at two-minute intervals plus the provision of telemetry, allowing near real-time monitoring, whereas moderate-significance overflows require monitoring at 15-minute intervals and, up to January 2021, there were no monitoring equirements for low-significance overflows.

The amenity value is derived from how the watercourse is used:

- **High-amenity:** sites where bathing or immersive water contact sports occur, or protected waters.
- **Moderate-amenity:** sites where boating occurs, or where the watercourse is adjacent to a popular footpath or flows through a housing development or frequently used town centre.
- **Low-amenity:** sites with casual riverside access used on a limited or infrequent basis.
- **Non-amenity:** sites seldom or never used for amenity purposes.



Amenity value: Versus average spills

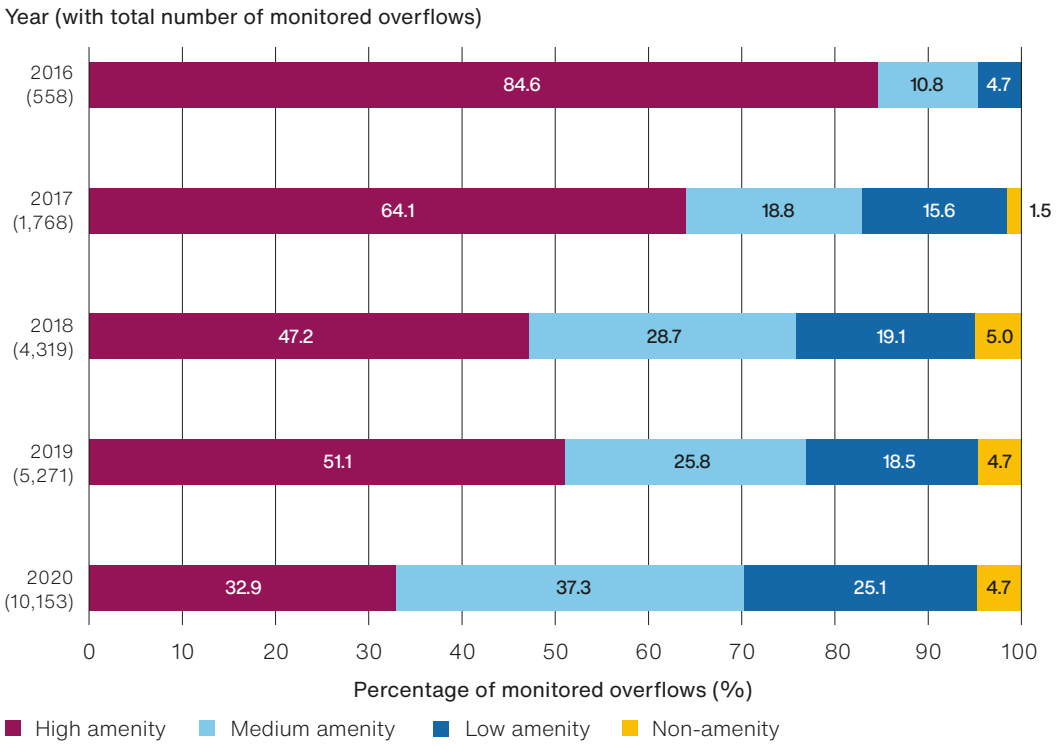
Over the last five years monitoring has been extended from mainly high amenity sites to cover lower amenity sites as well. The average number of spills per overflow has increased across all amenity classes.

Over the past five years, the proportion of monitored overflows at high-amenity sites has decreased, suggesting that these sites were more likely to have had monitors installed sooner (**Figure 6**).

There is not a strong relationship between amenity value and the average number of spills for an overflow (**Figure 7**). This suggests that the increase in the average number of spills may not be due to a higher proportion of lower-amenity overflows being monitored in later years and may be attributable to changes in rainfall between years.

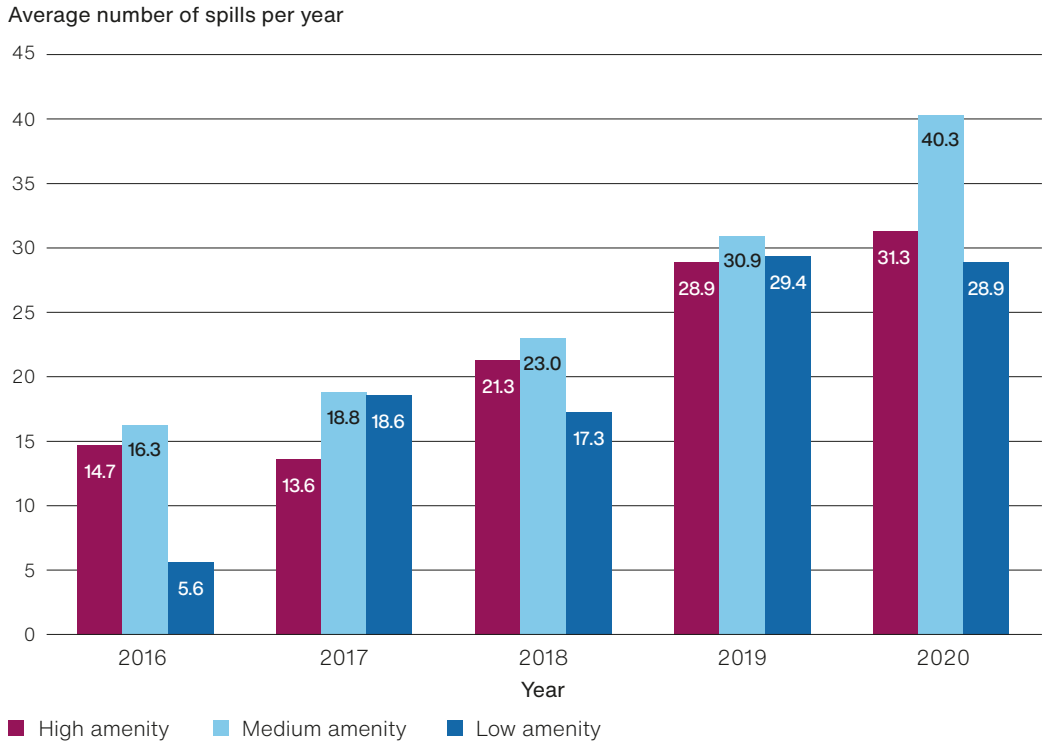
We did not receive returns from the Environment Agency (EA) for all companies for 2016 and 2017. The EA confirmed requirements for data provision in 2018 and all companies submitted returns in this format from 2018 onwards. Prior to this, five (2016) and six (2017) out of nine companies submitted returns in this format, while others submitted returns in different formats that were not comparable.

Figure 6: Percentage of monitored overflows by amenity value of receiving watercourse, 2016–2020



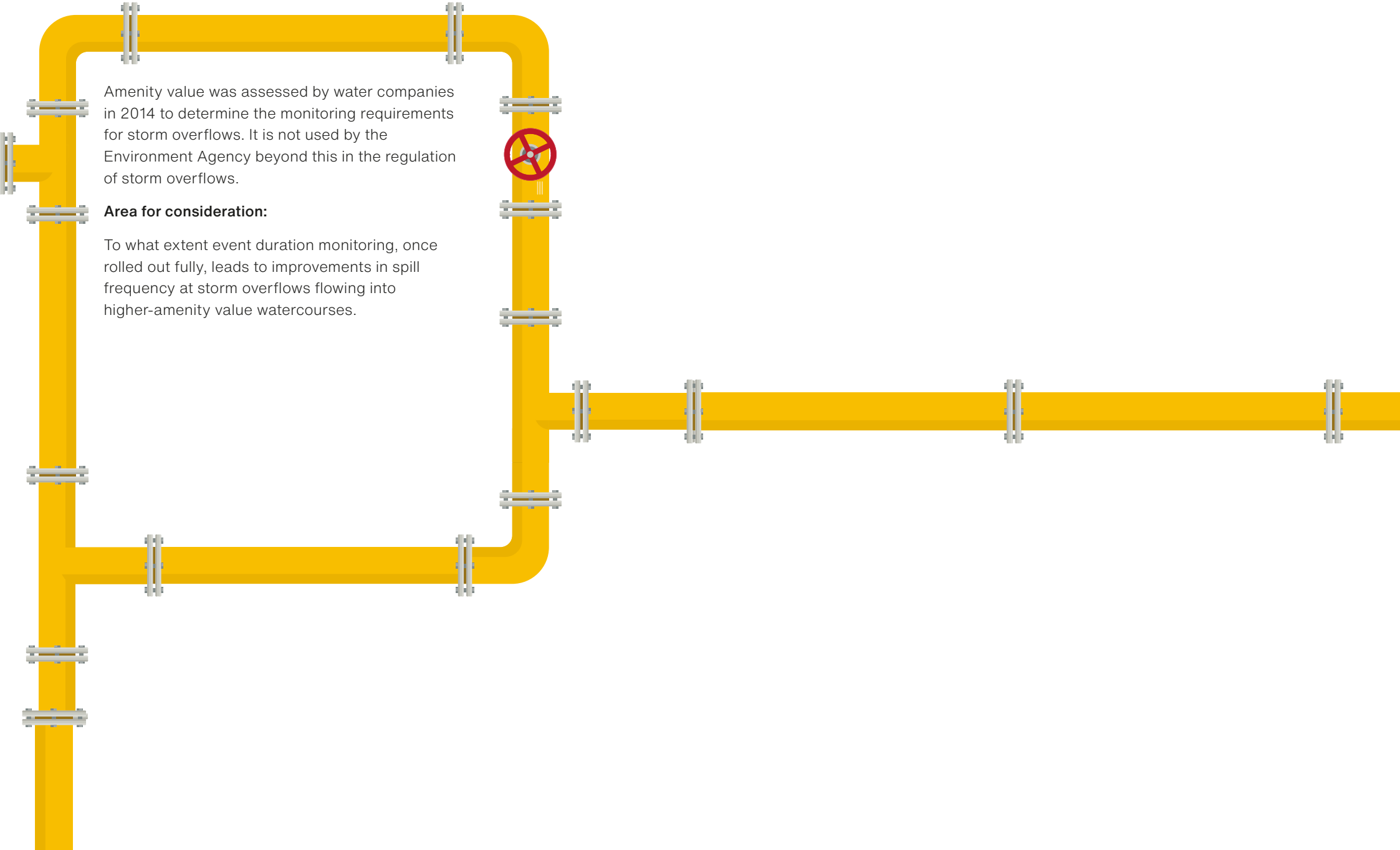
Source: National Audit Office analysis of Environment Agency data

Figure 7: Average number of spills per overflow by amenity value of receiving watercourse, 2016–2020



Source: National Audit Office analysis of Environment Agency data

Amenity value: Areas for consideration



Amenity value was assessed by water companies in 2014 to determine the monitoring requirements for storm overflows. It is not used by the Environment Agency beyond this in the regulation of storm overflows.

Area for consideration:

To what extent event duration monitoring, once rolled out fully, leads to improvements in spill frequency at storm overflows flowing into higher-amenity value watercourses.

Pollution incidents: Context

The Environment Agency (EA) records a pollution incident where there has been an impact on the environment. A spill from an overflow during dry weather has a greater chance of resulting in a pollution incident because the sewage is not diluted by rainwater.

Alongside regulating the use of storm overflows, the EA also investigates incidents of pollution within England's inland and coastal waters. Pollution incidents have a variety of sources but some will be attributable to the discharge from storm overflows.

A spill from a storm overflow is considered a pollution incident when it has an impact on the environment, people or property. When operating during wet weather, this may not be the case if the effluent is heavily diluted by rainwater entering combined sewers.

Storm overflows are much more likely to cause pollution incidents when discharging during dry weather because sewage will be undiluted. This mainly occurs when there is a blockage in the sewer and the flow is diverted through a storm overflow. These cases are outside permit conditions and are considered a breach of permit.

The EA classifies all pollution incidents reported to it on a four-point scale for their impact on water, land and air. The scale ranges from:

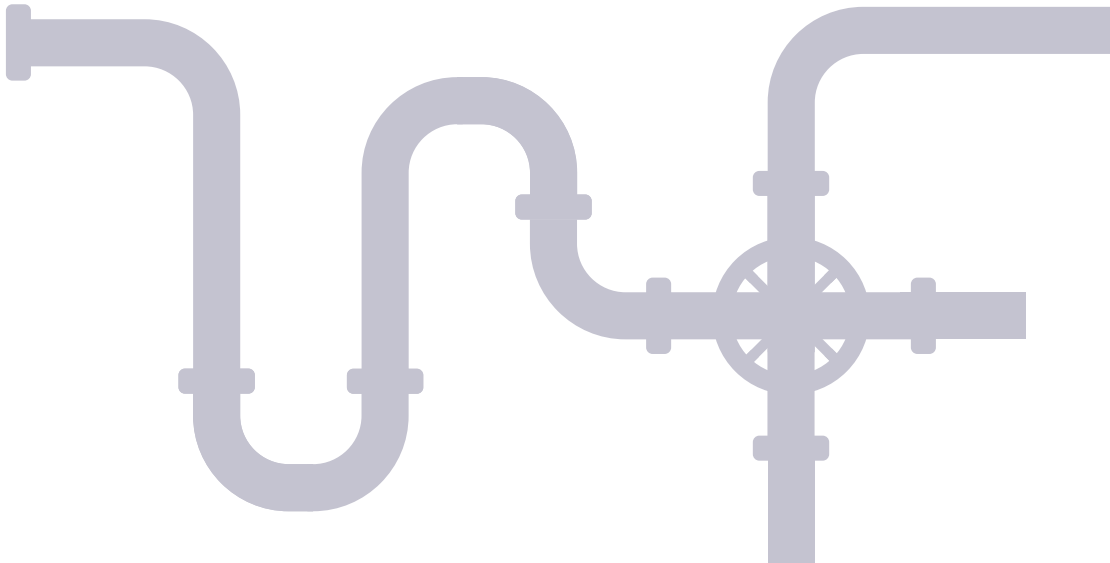
Category 1: Major, serious, persistent and/or extensive impact or effect on the environment, people and/or property.

Category 2: Significant impact or effect on the environment, people and/or property.

Category 3: Minor or minimal impact or effect on the environment, people and/or property.

Category 4: Substantiated incident with no impact.

Analysis on the following slides covers category 1 to 3 pollution incidents that were caused by storm overflows.



Pollution incidents: Reporting and Environment Agency attendance (1)

Most pollution incidents recorded by the Environment Agency (EA) for storm overflows remain classified at the default category 3 level (minor environmental impact). The EA attends almost all incidents classified higher than this, while attending 15% to 20% of incidents overall.

1,908 pollution events identified as arising from storm overflows were reported to the EA between 2010 and 2020. The number of incidents reported annually dropped significantly between 2012 and 2015 (Figure 8).

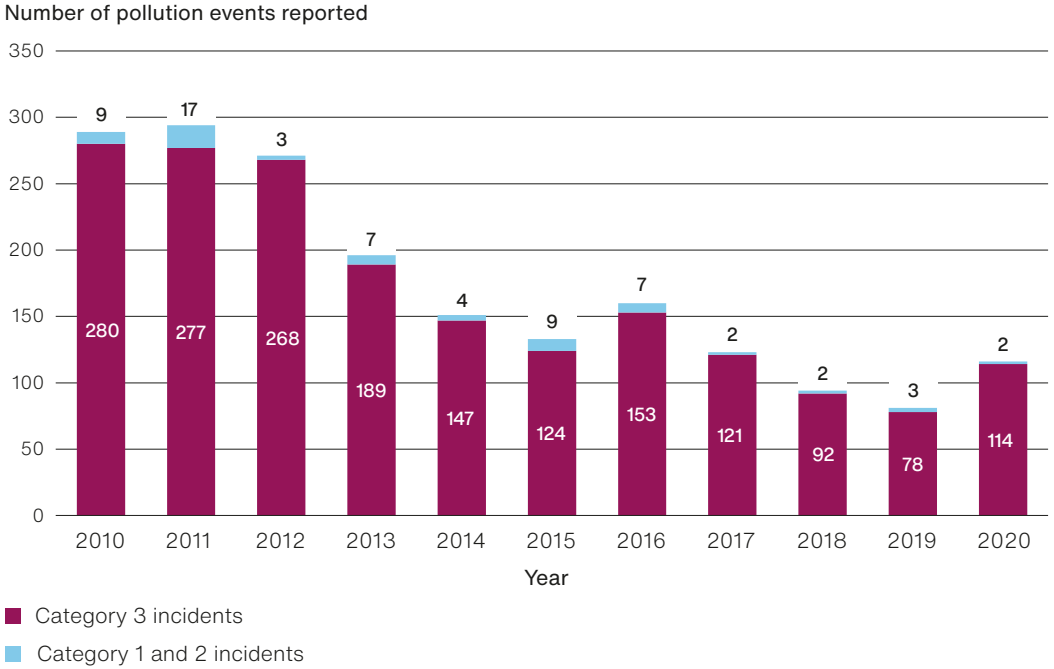
65 of these incidents were deemed major or significant (category 1 or 2 incidents), which accounted for 1.7% of all category 1 and 2 incidents in water environments between 2010 and 2020.

EA officials explained that all water pollution incidents reported to them are initially automatically classed as category 3 events. Incidents can be downgraded to category 4 or upgraded to category 1 or 2 if the EA receives evidence of scale of impact.

Most incidents are classed as category 3: minor impact on water quality (**Figure 8**).

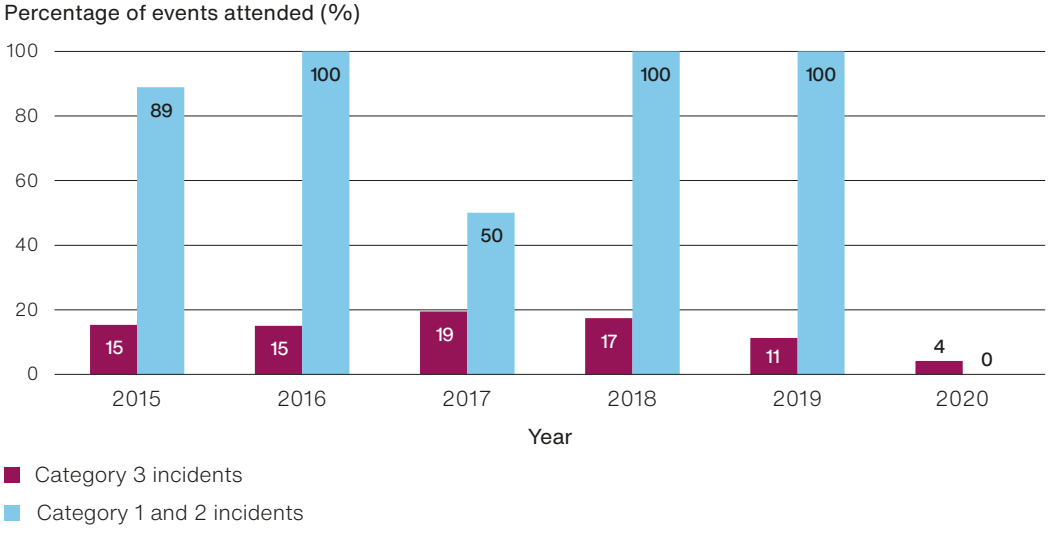
The EA attends around 20% of all storm overflow water pollution and most events that are category 1 or 2 in terms of their impact on water quality (**Figure 9**). The COVID-19 pandemic has had an impact on the EA's attendance in 2020.

Figure 8: Pollution events classed as being at storm overflows by water quality impact rating, 2010–2020



Source: National Audit Office analysis of Environment Agency data

Figure 9: Proportion of pollution events attended by the Environment Agency by water quality impact category, 2015–2020



Source: National Audit Office analysis of Environment Agency data

Pollution incidents: Reporting and Environment Agency attendance (2)

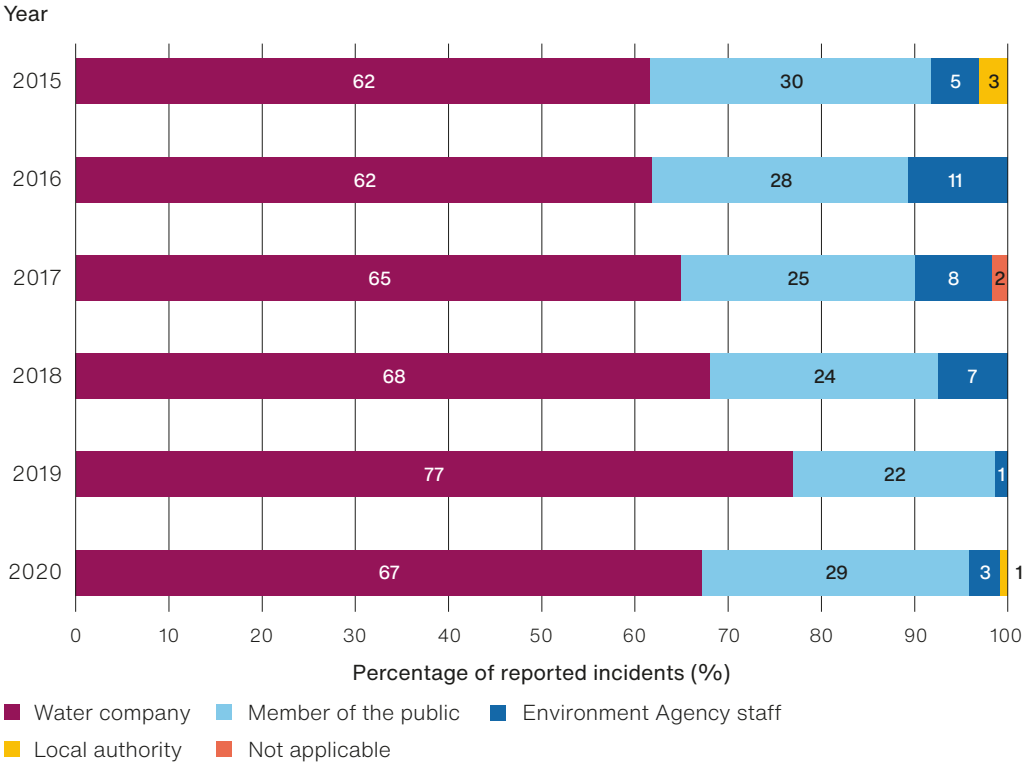
Most pollution incidents are reported to the Environment Agency (EA) by water companies, followed by reports from members of the public. Attendance by the EA at incidents in high- or medium-amenity sites has declined over the past five years, while incidents at low-amenity sites have the highest attendance rates.

Pollution incidents are reported to the EA by a range of different groups. Most storm overflow pollution incidents are reported by water companies (**Figure 10**). Between 2015 and 2019, the proportion reported by water companies increased from 62% to 77%. The level of self-reporting is used by the EA as a metric to score water company performance.

The EA categorises the type of premises where a pollution incident occurs. The analysis shown relates to those specifically referenced as Combined Sewer Overflows(CSOs). The EA told us that other premise types can also generate a flow into storm overflows. Analysis of the description of premise details for 'CSO' identified a further 41 pollution incidents. It is unclear how many pollution incidents resulted in a flow through a storm overflow.

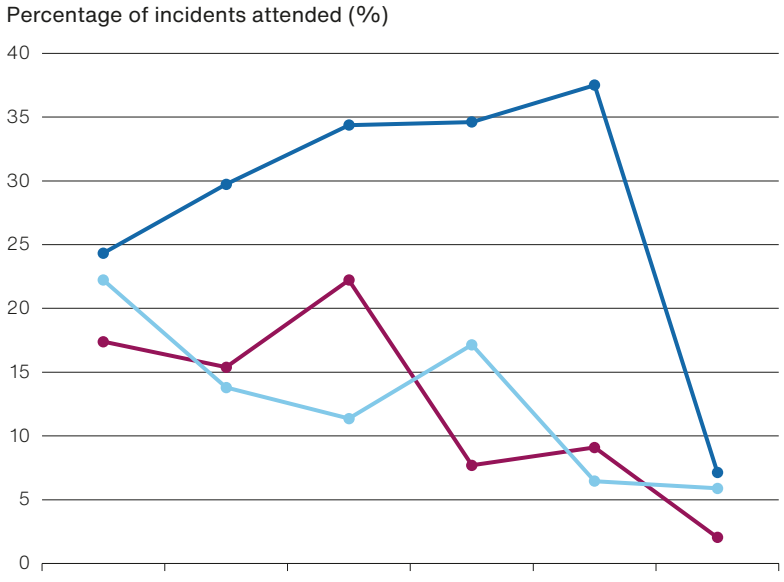
The EA attends a greater proportion of storm overflow pollution events in water bodies classed as having a low amenity (**Figure 11**).

Figure 10: Percentage of storm overflow pollution incidents by reporting group, 2015–2020



Source: National Audit Office analysis of Environment Agency data

Figure 11: Percentage of storm overflow pollution incidents attended by the Environment Agency by nearest watercourse amenity value, 2015–2020



	2015	2016	2017	2018	2019	2020
High amenity	17.4	15.4	22.2	7.7	9.1	2.0
Medium amenity	22.2	13.8	11.4	17.1	6.5	5.9
Low amenity	24.3	29.7	34.4	34.6	37.5	7.1

Source: National Audit Office analysis of Environment Agency data

Pollution incidents: Causes and water company compliance

Pollution incidents linked to storm overflows are predominantly caused by blockages in the sewer network, meaning that most pollution incidents relate to non-compliant use of overflows.

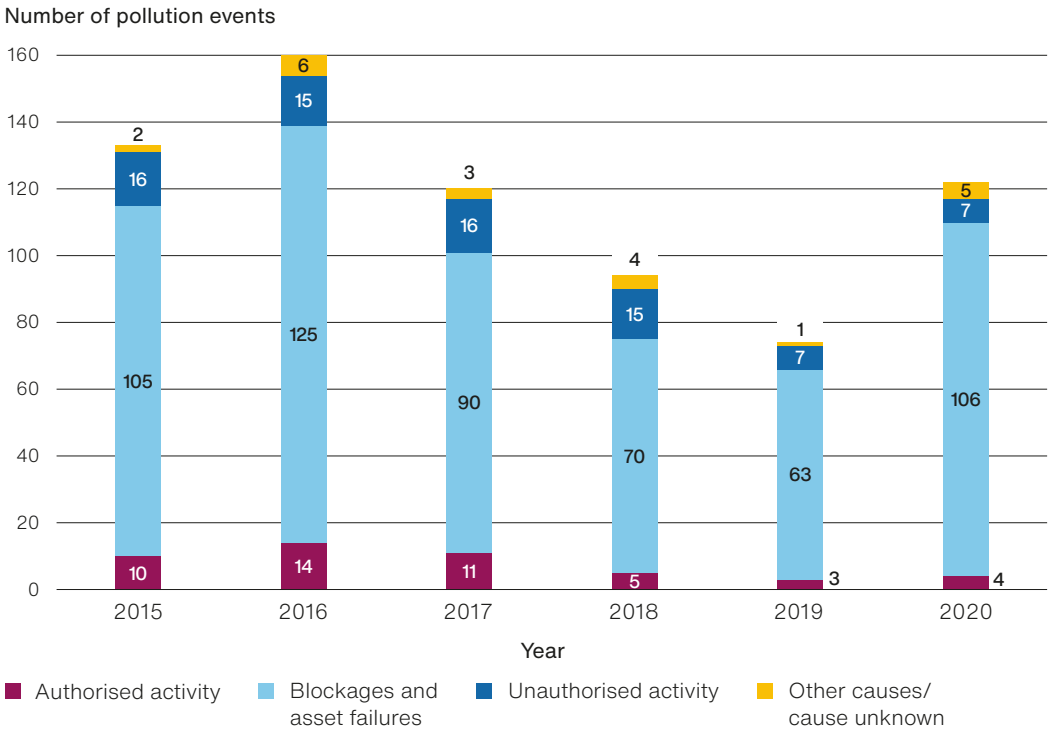
The Environment Agency (EA) categorises and records the causes of pollution events using a two-tier categorisation (e.g. Containment and control → Sewer failure or overflows) that is supplemented by a text explanation of the cause (e.g. unauthorised discharge from emergency overflow at pumping station).

Blockages and asset failures are the most frequent reason for storm overflows causing a pollution incident. A review of the detailed cause explanation shows that most of these are blockage-related incidents (**Figure 12**). Some incidents are caused by the authorised use of an overflow during wet conditions.

The EA also records whether the pollution event relates to compliant activity (e.g. excess water flow from a storm event) or non-compliant activity (flows resulting from a blockage) and determines whether the event is a breach of the permitted conditions under its compliance classification scheme (CCS). Between 2015 and 2020, 479 storm overflow events were deemed to be non-compliant and a breach of CCS by the EA.

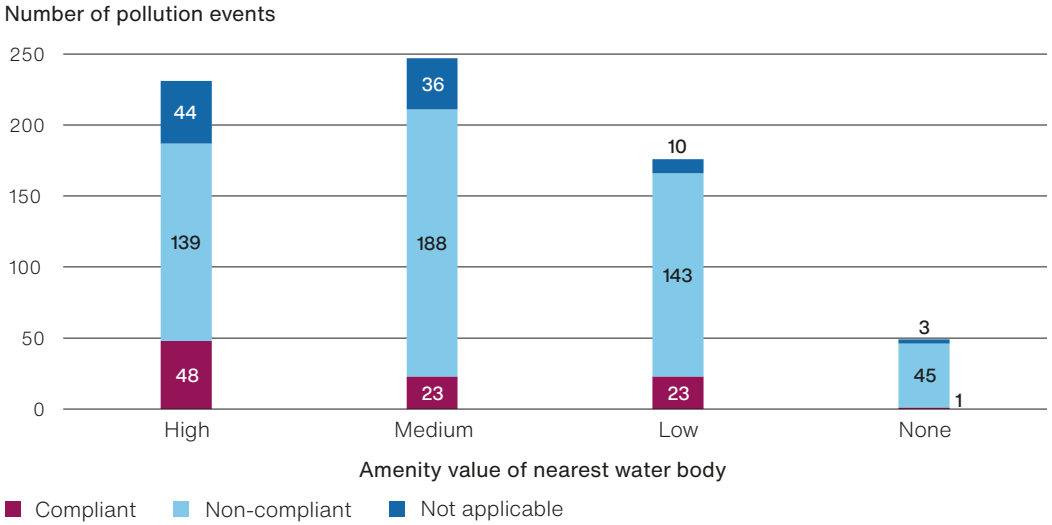
Non-compliant storm overflow events are split evenly between areas of high-, medium- and low-amenity value (**Figure 13**).

Figure 12: Causes of sewer overflow pollution events, 2015–2020



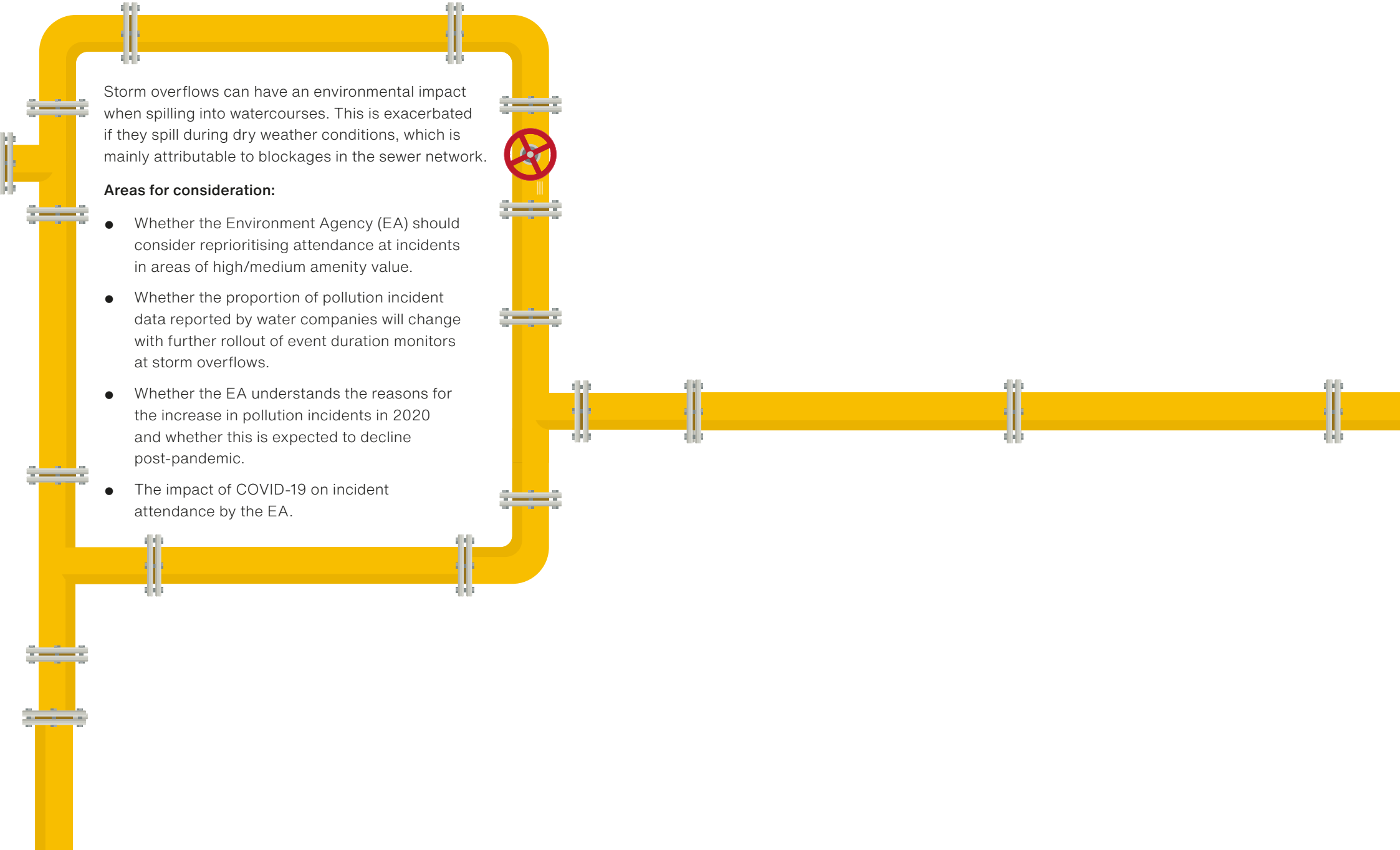
Source: National Audit Office analysis of Environment Agency data

Figure 13: Number of pollution events from sewer overflows by amenity value and whether they are compliant with permit, 2015–2020



Source: National Audit Office analysis of Environment Agency data

Pollution incidents: Areas for consideration



Storm overflows can have an environmental impact when spilling into watercourses. This is exacerbated if they spill during dry weather conditions, which is mainly attributable to blockages in the sewer network.

Areas for consideration:

- Whether the Environment Agency (EA) should consider reprioritising attendance at incidents in areas of high/medium amenity value.
- Whether the proportion of pollution incident data reported by water companies will change with further rollout of event duration monitors at storm overflows.
- Whether the EA understands the reasons for the increase in pollution incidents in 2020 and whether this is expected to decline post-pandemic.
- The impact of COVID-19 on incident attendance by the EA.

Water quality sampling: Context

The Environment Agency (EA) collects water quality samples for a variety of reasons, mainly as part of statutory water quality monitoring. It does not carry out routine monitoring of storm overflows as part of its regulatory activity but it does carry out a limited monitoring in reaction to pollution incidents.

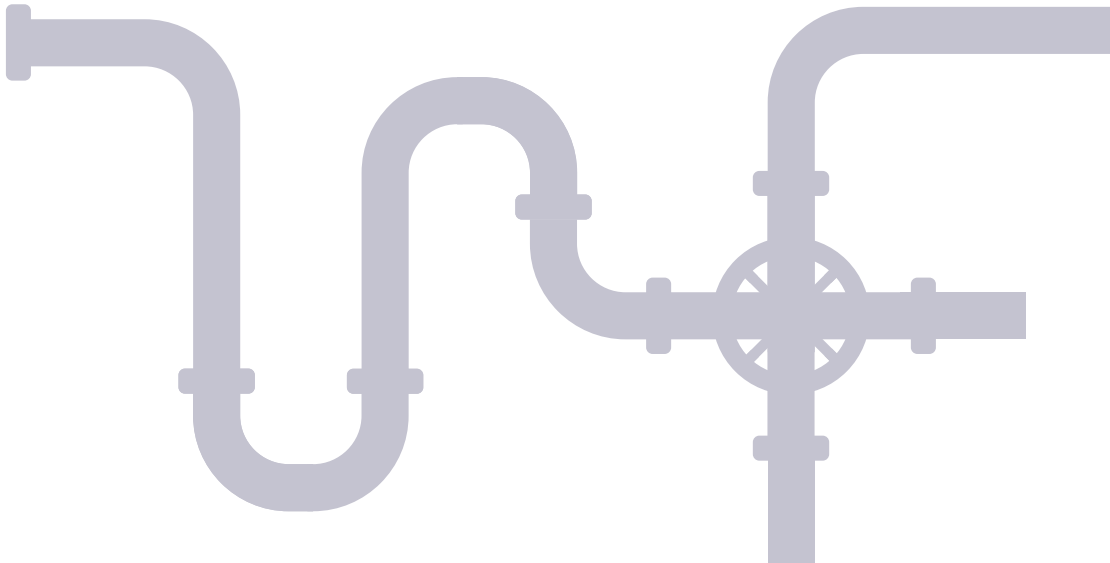
The EA's Water Quality Archive provides data on water quality measurements.

Samples are taken for a variety of reasons, including compliance assessments against discharge permits, investigation of pollution incidents and environmental monitoring.

Some third-party data, such as water company self-monitoring compliance data, are included but these records are not complete.

The EA does not carry out routine monitoring of storm overflows to assess compliance but it can monitor reactively by exception and on a risk basis following pollution incidents.

The EA does carry out routine compliance audits of water quality for treated effluent discharged from sewage treatment works and it collected water quality samples for close to 5,000 of these in 2019.



Water quality sampling: Summary

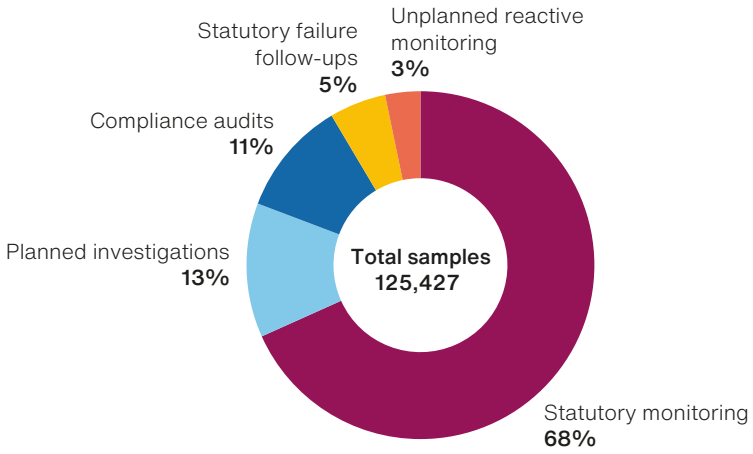
Work on storm overflows make up a very minor part of the Environment Agency's (EA)'s water quality archive. Since 2013, the number of reactive inspections at storm overflows has dropped significantly.

Over two-thirds of the water quality samples collected by the EA are for statutory water quality monitoring purposes (**Figure 14**).

Unplanned reactive monitoring samples made up only 3% of total water samples taken in 2019, and samples taken for storm sewer discharge were only a very small fraction of these (0.2% of the 3%).

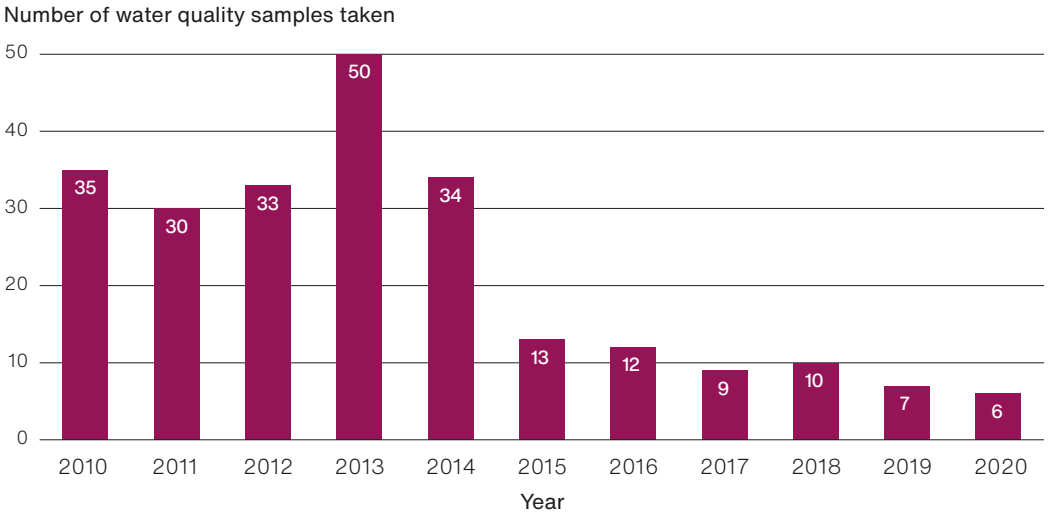
Since 2010, the number of reactive monitoring samples taken at storm overflows peaked in 2013, before declining significantly. In 2019, the number of samples taken was 86% lower than in 2013 (**Figure 15**).

Figure 14: Percentage of water quality samples taken by the Environment Agency by purpose, 2019



Source: National Audit Office analysis of Environment Agency data

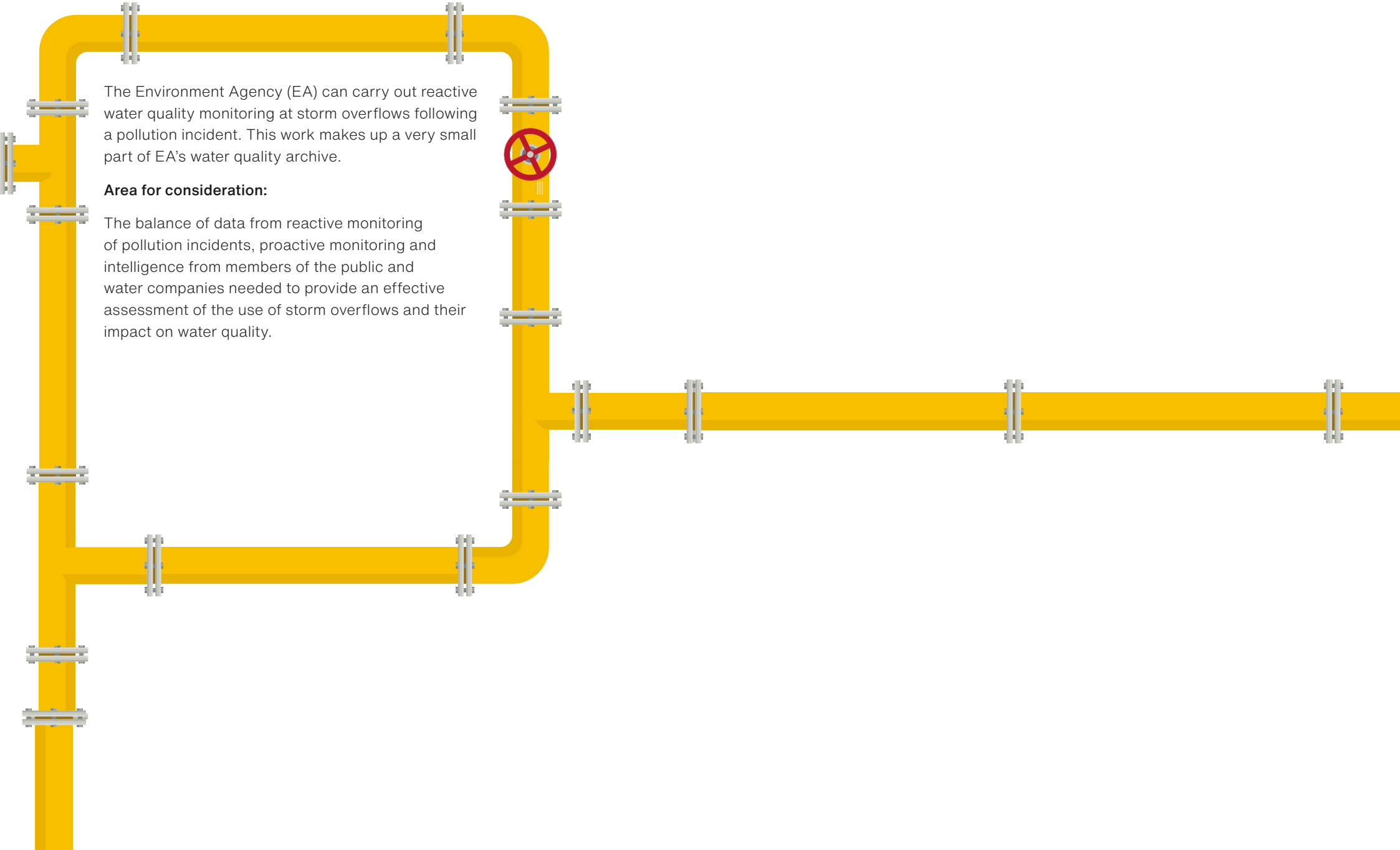
Figure 15: Number of unplanned reactive monitoring samples from storm overflows, 2010–2020



Note: In some cases water quality monitoring is carried out by a third party and is not included in these data. For example for the major case brought against Southern Water in 2021, the Centre for Environment, Fisheries and Aquaculture assessed the impact on water quality for the Environment Agency.

Source: National Audit Office analysis of Environment Agency data

Water quality sampling: Areas for consideration



The Environment Agency (EA) can carry out reactive water quality monitoring at storm overflows following a pollution incident. This work makes up a very small part of EA's water quality archive.

Area for consideration:

The balance of data from reactive monitoring of pollution incidents, proactive monitoring and intelligence from members of the public and water companies needed to provide an effective assessment of the use of storm overflows and their impact on water quality.

Enforcement actions: Context

When a water company causes a pollution incident, the Environment Agency (EA) can pursue enforcement action, which ranges from cautions to prosecutions. In recent years, the EA has been pursuing more enforcement undertakings that avoid the need to go to court.

When the EA has found a water company to have caused a pollution incident, it can pursue an enforcement action.

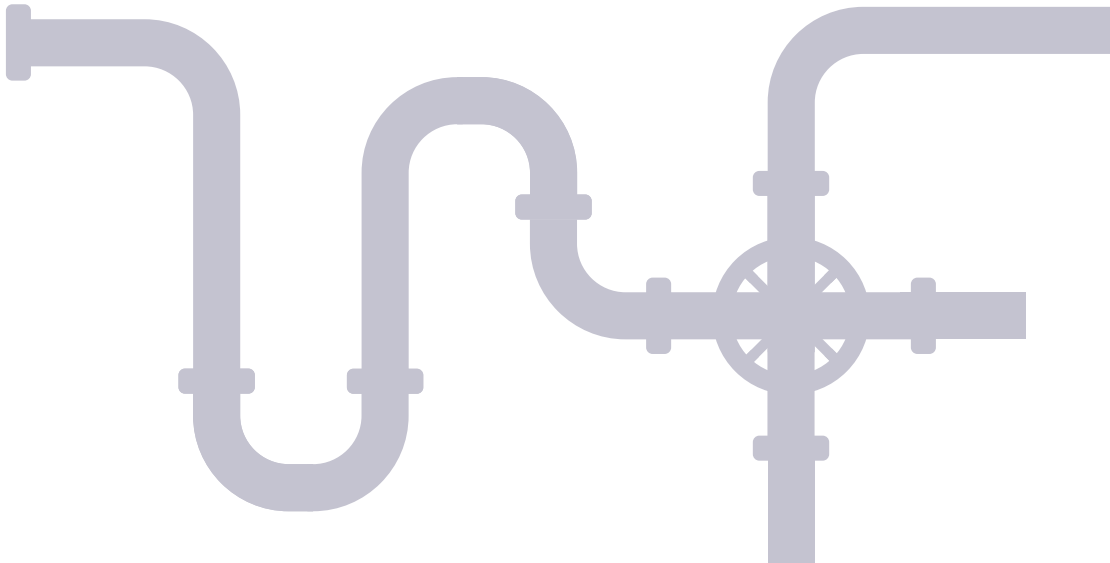
For the most serious incidents, a court prosecution is sought. If successful, this will result in a fine being imposed on the water company.

From 2015 to 2020, water companies paid fines from 42 prosecutions, totalling just over £35 million. Of these prosecutions, 18 related to any event (e.g. blocked sewer, failure at sewage treatment works) that resulted in unauthorised use of storm overflows, totalling £25.7 million.

For less serious incidents, the EA can issue formal cautions to companies, which can lead to stronger actions if non-compliance continues.

From 2016, the EA made more use of civil sanctions, which include enforcement undertakings. These avoid the need to go to court. Instead, water companies agree to pay an amount to a third party, such as a local trust.

From 2016 to 2020, the EA agreed 59 enforcement undertakings, averaging a £176,000 pay-out for each.



Enforcement actions: Statistics

The Environment Agency (EA) has been pursuing an average of 14 enforcement undertakings per year over the past four years, effectively replacing its use of formal cautions. The value of fines peaked in 2017, mainly attributable to a single 'supercase' against Thames Water.

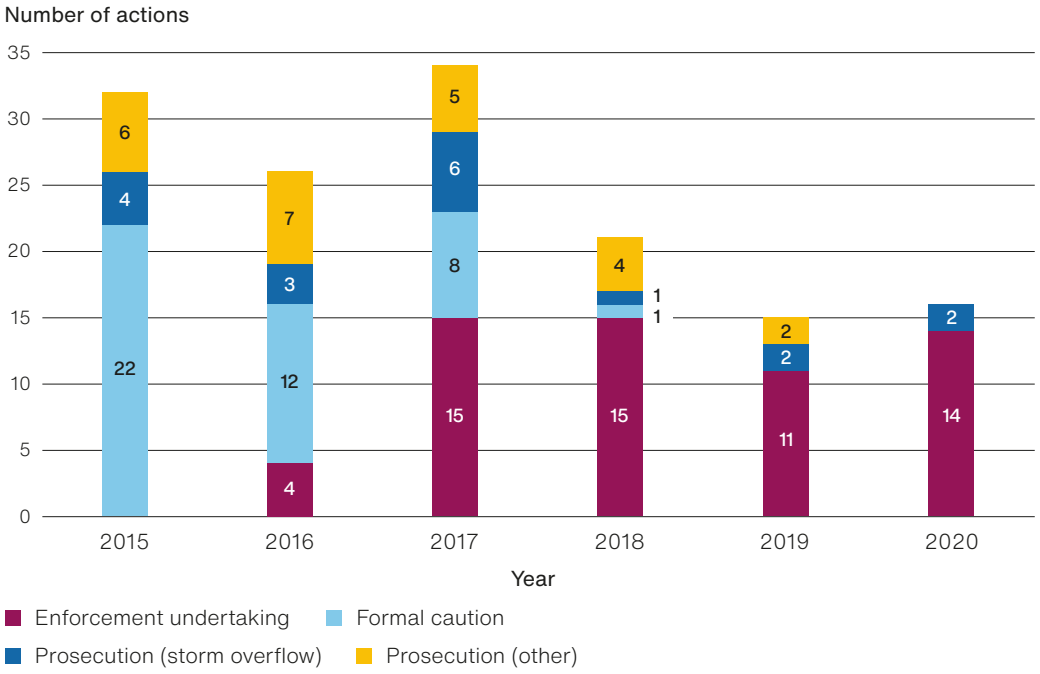
From 2016, the EA began to move more towards pursuing enforcement undertakings from water companies. Formal cautions moved from being the most common type of action used in 2015 to none being applied in 2019 and 2020 (**Figure 16**).

The value of enforcement undertakings has remained between £2.5 and £3.4 million in the period 2018–2020 while the value of prosecutions has varied significantly (**Figure 17**).

Most of the fines from prosecutions in 2017 came from a single 'supercase' brought against Thames Water totalling £19.7 million, mostly relating to the illegal discharge of untreated sewage, some of which was attributed to storm overflows.

We received data up to the end of 2020 that did not include £90 million of fines against Southern Water from 2021. This came from 51 offences relating to the discharge of untreated sewage between 2010 and 2015.

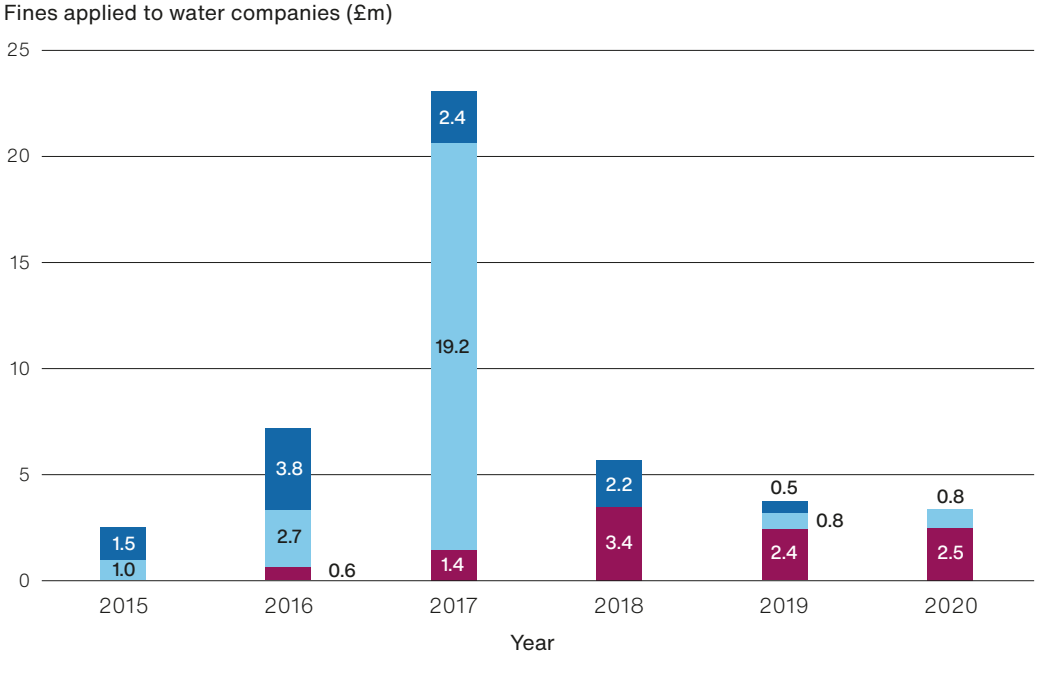
Figure 16: Number of enforcement actions against water companies by the Environment Agency, 2015–2020



Note: We do not have the breakdown of formal cautions and enforcement undertakings which featured storm overflows.

Source: National Audit Office analysis of Environment Agency data

Figure 17: Total value of fines applied to water companies by the Environment Agency, 2015–2020



Source: National Audit Office analysis of Environment Agency data

Enforcement actions: Areas for consideration

When water companies breach the terms of their permits, the Environment Agency can pursue an enforcement action. Prosecutions are sought for the poorest performers or incidents with the biggest risk of environmental harm.

Areas for consideration:

- Whether enforcement undertakings effectively influence water companies to remediate the issues causing non-compliant use of storm overflows.
- Whether enforcement undertakings represent an effective solution to storm overflow non-compliance compared with prosecutions.

Income and funding: Context

Most of the Environment Agency's (EA) regulatory activity for storm overflows is funded by income from the charges applied to the permits it issues. Enforcement activity is not covered by this charge income and is instead funded from the annual grantin aid provided by the Department for Environment, Food & Rural Affairs (Defra).

The EA's regulatory activity for storm overflows is funded through charges it levies for the permits it issues to water companies for the operation of storm overflows.

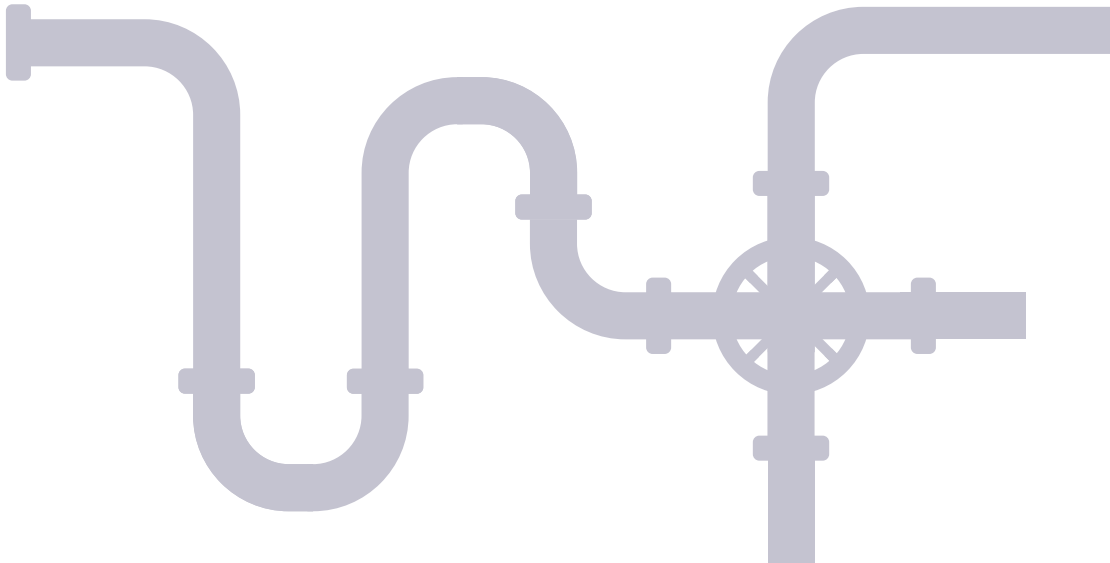
This income is then split between national delivery (32%) and local delivery (31%), with the remainder going to Defra Corporate Services, EA's Environment and Business Directorate and other areas such as capital surplus and financing.

The funding for local delivery is allocated proportionally according to the charge income generated in each local operational area. The local operational teams decide on the best way to deliver local regulatory outcomes, working within a national governance and decision-making framework. The work this funds includes: permit compliance activities, environmental monitoring, environmental planning, incident response and partner engagement by local teams.

The main activities funded nationally include: monitoring, catchment services, water industry account management, operational services and permit maintenance.

The charge income cannot be used by the EA to fund any enforcement actions it takes against water companies. This is instead funded from the Environment and Business grant-in-aid that Defra provides to EA to cover a range of its activities.

A portion of the grant-in-aid is prioritised for certain work, such as on waste crime and air quality monitoring.



Income and funding: Summary

The Environment Agency's (EA) income from permit charges increased substantially in 2018/19 after its Strategic Review of Charges. Meanwhile the grant-in-aid it receives from the Department for Environment, Food & Rural Affairs, partly used to fund enforcement activity, has reduced significantly since 2010.

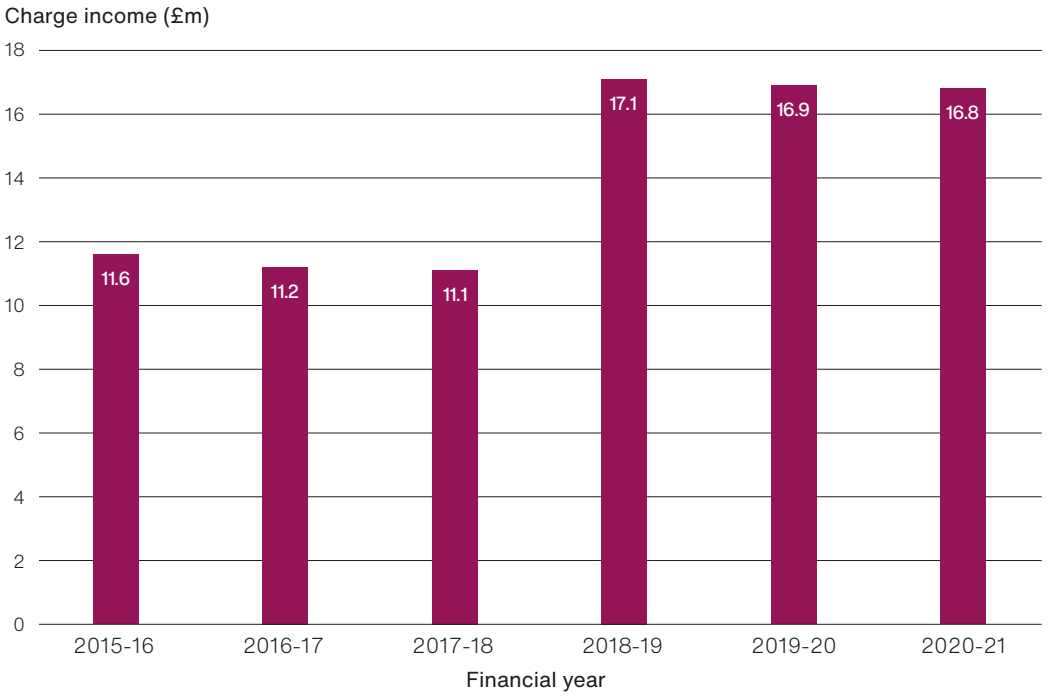
In 2018-19, the EA's water quality charge income, used to fund its national and local compliance activities, increased following a review of its charges. This included a 54% increase in storm sewage permit subsistence charges (**Figure 18**).

From 2010/11 to 2019/20 the core grant-in-aid from which the EA's enforcement work on storm sewage discharges is funded reduced by 80% (**Figure 19**).

The EA estimates that 1.6% of the core grant-in-aid is allocated to delivery teams to support water quality enforcement activities.

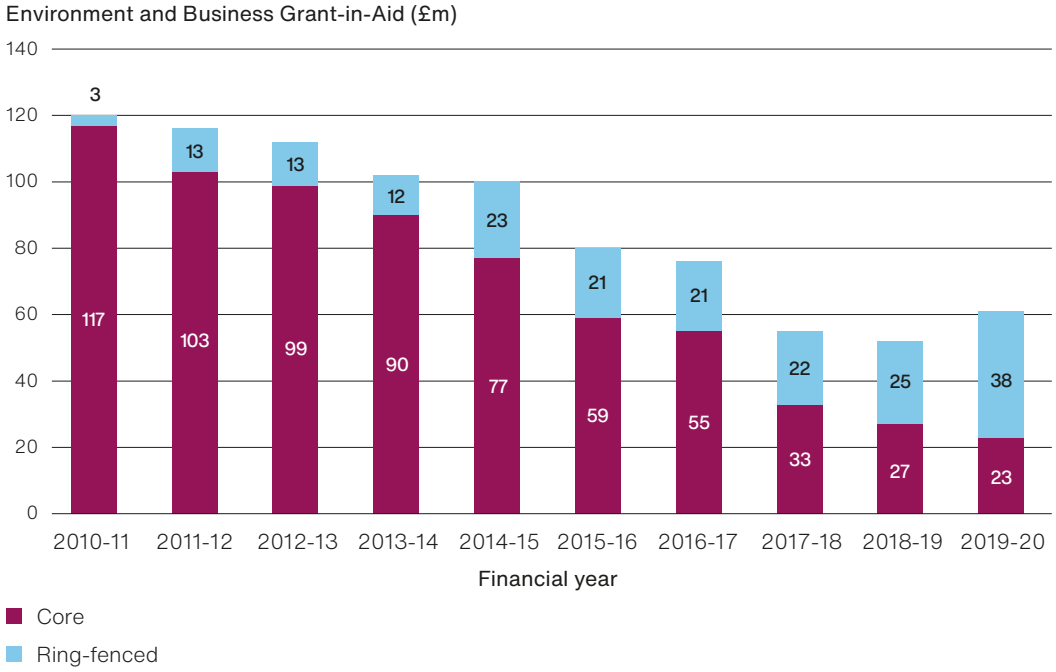
The majority of the grant-in-aid is now ring-fenced for specific projects or work. For example, £10 million was ring-fenced for waste crime, £6.7 million for air quality monitoring and £7.1 million for EU exit in 2019-20.

Figure 18: Storm sewage discharge income from permitting, 2015-16 to 2021-22



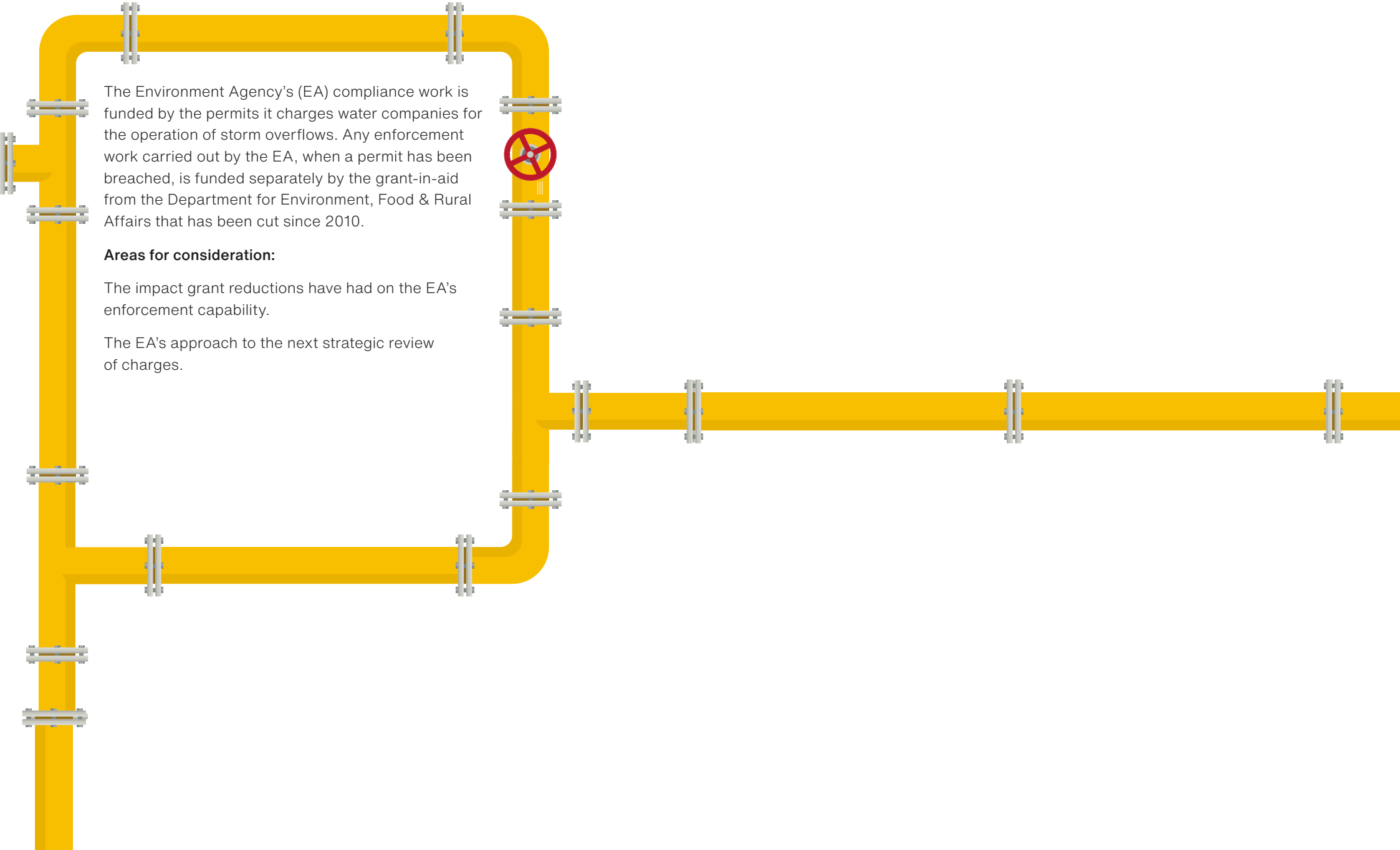
Source: Environment Agency data

Figure 19: Environment and Business Grant-in-Aid funding to the Environment Agency, 2010-11 to 2019-20



Source: Environment Agency data

Income and funding: Areas for consideration



The Environment Agency's (EA) compliance work is funded by the permits it charges water companies for the operation of storm overflows. Any enforcement work carried out by the EA, when a permit has been breached, is funded separately by the grant-in-aid from the Department for Environment, Food & Rural Affairs that has been cut since 2010.

Areas for consideration:

The impact grant reductions have had on the EA's enforcement capability.

The EA's approach to the next strategic review of charges.

Appendix One: Our insight approach and methodology

We **analysed data** from:

- The Environment Agency (EA)

In reviewing data, we considered technical notes and other statements from the data producers on challenges in collecting data and caveats around its use.

We **requested key datasets** from EA. All analysis within this pack is based on this data. These datasets included:

- Annual event duration monitoring data for storm overflows
- Water quality measurements taken by the Environment Agency
- An extract of pollution incidents related to storm overflows from EA's National Incident Reporting System
- Permit data for consented discharges into controlled waters
- Supplementary data on storm overflows, including an assessment of amenity class by water companies
- Details of enforcement actions brought against water companies by EA, 2015–2020
- Income and funding data for EA's regulation of storm overflows

We **interviewed Agency officials** to understand EA's objectives for its regulation of storm overflows as well how it collects and uses this data as part of its regulatory activities. We also **spoke to officials at the Department for Environment, Food & Rural Affairs** to understand the policy landscape in which EA operates.

We did not conduct interviews with third parties, such as water companies, but did **share extracts with named bodies** to check the factual accuracy of any references. In some cases we have included further context provided at this stage.