

Llyr Gruffydd MS
Chair
Climate Change, Environment and Infrastructure Committee
Welsh Parliament
Cardiff Bay
Cardiff
CF99 1SN

3rd November 2023

Dear Llyr

Thank you for the invitation to give evidence to the Climate Change, Environment and Infrastructure Committee regarding river water quality and sewage discharges. We previously gave evidence to the committee on 3rd February 2022 on this matter, sent further information to you in August 2023, and have also written to the Committee in recent months to offer to attend a further session of the committee in light of recent media and political scrutiny of our performance. We therefore welcome the opportunity to give evidence to the committee meeting on 9th November.

On Friday, 2nd October, we submitted our draft Business Plan for 2025-30 to Ofwat. If approved, the Plan will result in the company's biggest ever investment programme, worth £3.5 billion investment over the five years, which will be equivalent to a 68% increase on the investment between 2020 and 2025.

A key focus of the Plan is to adopt a collaborative approach to reducing our impact on the environment, in particular, playing our part in helping improve river water quality. We are committing to invest nearly £1.9 billion in the environment between 2025 and 2030 – 84% more than across 2020-25. This will include substantially reducing phosphorous discharges from wastewater treatment to rivers in Special Areas of Conservation and starting on a multi-AMP programme to stop our network of 2,300 storm overflows causing ecological harm to rivers and coastal water in our operating area. We have also invested to tackle around 40 site that new flow monitoring has identified deficiencies in plant operation.

The development of this five year Plan has been shaped by household and business customers and by the strategic steers set by the PR24 Forum led by Welsh Government. It prioritises improving river water quality and addressing the challenge of storm overflows, enhancing key services, and strengthening resilience against the challenges facing the company, in particular climate change.

Funding such an ambitious programme will require customer bills to increase, but we believe that our proposals strike the right balance between investing to improve service for today's customers,

providing sufficient financial support for those who are struggling to make ends meet, whilst also not storing up problems for future generations. This is a difficult balance against a backdrop of increasing customer and stakeholder expectations, more volatile weather conditions due to climate change, and the challenges of the current cost of living crisis.

We do not shy away from these challenges and continue to strive to fulfil our company purpose which was incorporated into our Articles of Association in 2019, that is “to provide high quality and better value drinking water and environmental services, so as to enhance the well-being of our customers and the communities we serve, both now and for generations to come.”

We currently face many operational challenges and performance isn’t as good as we want it to be, but we continue to operate openly and transparently and strive to make the right decisions for the environment and our customers. Where we get it wrong, or our performance fails to meet expectations, our regulators hold us to account and it is only right that there is wider political and media scrutiny.

However, some of the current debate in the media and some of the wider political discourse has been factually incorrect and lacks an appreciation of the current regulatory and policy framework within which the water sector operates. It is right that there should be strong scrutiny and accountability, but such discourse should be cognisant of the legislative and regulatory history and boundaries in which companies work.

The Committee’s report on Water Quality and Sewage Discharges in June 2022 made three specific recommendations relating to our work. I can confirm that two of three have been delivered as previously noted, and the third, relating to the reporting of discharges from storm overflows “within the hour” will be in place for all storm overflows by 2025 as previously announced, but we will be providing such information on our website for bathing waters and high amenity sites from early next year.

Below, I have set out in detail some relevant context and information to inform the Committee’s work.

Please do not hesitate to contact me if you require any further information.

We look forward to providing evidence to you on 9th November.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Peter Perry', written in a cursive style.

Peter Perry
Chief Executive

Contents List

1. Legislative, Ownership and Regulatory Context
 - 1.1 Legislative Context
 - 1.2 Glas Cymru Ownership Model
 - 1.3 Regultaory Framework

2. Financing Welsh Water
 - 2.1 Borrowing money
 - 2.2 Reserves
 - 2.3 Dividends

3. Permit setting, enforcement and prosecution
 - 3.1 Historical context
 - 3.2 Permits
 - 3.3 Enforcement and prosecution

4. Storm Overflows and environmental impact
 - 4.1 Storm overflow monitoring
 - 4.2 Source Apportionment
 - 4.3 How river and bathing water quality in Wales compares to other countries

5. Better River Quality Taskforce (BRQTF) and proposed approach to reduce environmental harm from storm overflows
 - 5.1 Phosphate reduction investment
 - 5.2 Storm overflow investment
 - 5.3 Using nature-based solutions

6. Cardigan Wastewater Treatment Works
 - 6.1 Regulatory reporting of relevant data

7. Environmental Performance Assessment 2022/23

8. Ofwat Water Company Performance Report 2022/23

9. Business Plan 2025-30

10. Customer Bills

1. Legislative, Ownership, and Regulatory Context

Since the water and sewerage industry was privatised in 1989 a regulatory framework has been in place to ensure that consumers receive high standards of service at a fair price. Following the collapse of Hyder who owned Welsh Water and SWALEC in 2000, Glas Cymru acquired Welsh Water in 2001. The company operates within the same legislative and regulatory framework as the other 16 privatised water only and water and sewerage companies in England and Wales. Water and wastewater treatment service in Scotland and Northern Ireland remain public bodies.

Under Glas Cymru's ownership, Welsh Water's assets and capital investment are financed by bonds and retained financial surpluses. The Glas Cymru business model aims to reduce Welsh Water's asset financing cost, the water industry's single biggest cost (see finance section below).

1.1 Legislative Context

Water company boundaries, which are based on water pipe and sewer networks, predate devolution, reflect river catchments rather than the administrative border between Wales and England.

The Government of Wales Act 2006 (GoWA 2006) devolved a number of powers relating to the water industry to the Assembly (now Senedd), including water supply, water resources management (including reservoirs), water quality, consumer representation, flood risk management and coastal protection.

The GoWA 2006 was amended by the Wales Act 2017 (2017 Act). Sections 48- 52, Schedule 7A and Schedule 7B of the 2017 Act introduce provisions for implementing several Silk Commission recommendations relating to water and sewerage. These include devolving powers over sewerage to the Assembly, introducing an intergovernmental protocol for managing cross-border water issues and removing the Secretary of State's power to intervene in cases where an Assembly Bill or the actions of a public body in Wales have serious adverse impacts on water resources, supply or quality in England.

Legislative competence over water and sewerage undertakers is currently devolved on a 'wholly or mainly' basis. The appointment and regulation of an undertaker is devolved if the undertaker's appointment area lies wholly or mainly in Wales ('Welsh undertaker'), and it is reserved if the undertaker's appointment area lies wholly or mainly in England ('English undertaker').

The Silk Commission recommended aligning the boundary for legislative competence for water with the national border. This would effectively end the regulation of the industry in Wales on a 'wholly and mainly' basis. Provisions for implementing this recommendation are made in section 48(1) of the 2017 Act which are yet to be enacted. The practical implication of enacting section 48 are that Welsh Water's operations in England would be subject to UK Government policy – for example, this would allow all of Welsh Water's non-householder customers in England to switch water suppliers (as introduced under the Water Act 2014), whereas this does not apply to its current customer base in either Wales or England.

1.2 Glas Cymru Ownership Model

Glas Cymru acquired Dwr Cymru Welsh Water in 2001 and is unique in the UK utility industry in that it is:

- a private company with no shareholders (it is not, however, a mutual or co-operative)
- financed in the capital markets, with no government support; and
- all financial surpluses are used for the benefit of its customers.

Welsh Water provides an essential public service to the households, businesses and the environment in Wales. It is a highly capital intensive business, with assets that will serve many future generations. It has a huge capital investment programme, over £6 billion since 2001 with similar amounts to come. Its strategy is to deliver a secure, long-term credit quality to investors (such as pension funds and insurance companies) so as to raise the finance it needs at the cheapest possible cost, thereby keeping down bills to customers (around a third of which go to remunerate finance for investment).

Glas Cymru is a “company limited by guarantee”; it has no shareholders and so its corporate governance functions are the responsibility of its Board, which has a majority of independent non-executive directors, and its Members, around 50 individuals appointed following a process undertaken by an independent membership selection panel. Members are not representatives of outside stakeholder groups but rather are unpaid individuals whose duty is to promote the good running of the company, in the best interests of its customers.

Our governance processes are based on transparency and fairness, underpinning the values of our company purpose. We apply the principles set out in the UK Corporate Governance Code and Ofwat’s Leadership, Transparency and Governance Principles as required by our Licence from Ofwat which was amended in 2019 to include an obligation to comply with these principles. More details on how we meet the provisions of the Code and Ofwat’s Principles and more details on our Governance framework, are contained in the Corporate Governance Report in our latest Annual Report and Accounts.

1.3 Regulatory framework

The water sector is highly regulated and there are strict requirements on water companies across most of their operations. The main regulators are:

Welsh Government

The Welsh Government has devolved authority over most matters pertaining to the regulation of the water industry in Wales.

Drinking Water Inspectorate (DWI)

The Drinking Water Inspectorate is a statutory body with duties and powers to develop and update drinking water quality regulations (which derive from EU legislation), monitor

compliance with such regulations, and implement enforcement action where required. The Chief Inspector is appointed by the Secretary of State and by Welsh Ministers.

Natural Resources Wales (NRW) and the Environment Agency (EA)

Natural Resources Wales and the Environment Agency are the environmental regulators for Wales and England respectively, with important roles with respect to the regulation and planning of water companies. They set out water companies' environmental obligations in the National Environment Programme (NEP) in Wales, and the Water Industry National Environment Programme (WINEP) in England.

Natural England (NE)

Natural England are the adviser for the natural environment in England (this function is provided by NRW in Wales). Their purpose is to help conserve, enhance and manage the natural environment for the benefit of present and future generations, thereby contributing to sustainable development.

Consumer Council for Water (CCW)

The Consumer Council for Water (CCW) is a non-departmental public body of DEFRA and the Welsh Government established under the Water Industry Act 1991 (as amended) to represent the interests of consumers by handling complaints, acquiring and publishing information, providing advice, and investigating matters of interest to consumers. CCW is supported by regional committees established under the Act including a Wales Committee.

Ofwat

Ofwat is the economic regulator for the water industry. Its duties include protecting the interests of consumers, ensuring that water companies carry out their statutory functions, and furthering the resilience of water companies. Ofwat has a range of powers, including setting price limits and performance targets through the five-yearly Price Review process.

Department for environment, food and rural affairs (DEFRA)

Defra is responsible for improving and protecting the environment and so has a broad remit to play a major role in people's day-to-day life, from the food we eat and the air we breathe, to the water we drink. Defra aims to make our air purer, our water cleaner, our land greener and our food more sustainable. Its mission is 'to restore and enhance the environment for the next generation, leaving it in a better state than we found it'.

Each of the regulators monitor our performance and publish annual reports comparing us with the rest of the sector. If performance fails to meet the standards they expect, they have a range of enforcement options at their disposal, up to and including prosecution.

We submit multiple reports to our regulators. These cover a wide range of topics including annual reporting on finance and capital programme delivery, drinking water compliance, leakage,

wastewater treatment works performance, flow and storm overflow spill event and duration reports, sewer flooding, and customer complaints. We produce 3 yearly biodiversity action plans and are working on the first maps of our biodiversity hotspots that we plan to monitor on a 4 yearly cycle from now on to establish how their conditions are changing. We also produce 5 yearly reports for our Water Resource Management Plan and the newly introduced Drainage and Wastewater Management Plan (both of which look at how we will meet customer and environmental needs 25 years into the future) and our five yearly business plan described earlier.

2. Financing Welsh Water

Running costs (operating costs and the cost of maintaining assets in good condition) are paid for by customers in full every year through their bills.

Investment to improve services, so called enhancement expenditure, is not paid for by customers when it is incurred. Instead, water companies “borrow” the money for enhancement expenditure from investors.

The value of enhancement expenditure is added to the Regulatory Capital Value (RCV) and amortised over 25 years. This amortisation charge is recovered from customers through their bills as is the interest and dividends that companies have to pay their investors for their investments (shares or loans).

The RCV simply represents the amount of money owed to investors. Because of the scale of investment (i.e. enhancement expenditure) water companies are constantly cashflow negative and have to regularly raise money from investors.

2.1 Borrowing money

Between now and 2030, Welsh Water will have to raise £3.5 billion to fund its biggest ever investment programme and to refinance debt which falls for repayment. All water companies will also need to raise record breaking levels of new debt.

The ability to borrow and the interest rate charged on that debt depends on a company’s credit rating. There are 3 credit rating agencies which rate organisations from AAA down to BB. The only organisation that are AAA rated are governments (but not the UK’s or US’s) and some banks.

On average the water companies are BBB rated but Welsh water is A rated; significantly higher than other companies.

The biggest factor in deciding credit ratings is the level of indebtedness i.e. debt as a % of the value of the business, the RCV. This is called gearing. High gearing means lower resilience to financial shocks and more risk that companies will default on their debts.

Welsh Water has the lowest gearing in the industry (59%) and as a result the highest credit ratings in the industry. This means that investors see it as the most financial resilient company; are willing to lend to it and importantly, to lend at the lowest interest rates for water companies.

Welsh Water's interest rates are 0.3% less than Severn Trent and 1.5% less than Thames Water.

Ofwat's latest report on financial resilience ("Monitoring Financial Resilience), published in September 2023, states that they have "no specific concerns with the financial resilience of the company" and that our credit ratings and gearing levels are the best in the sector."

2.2 Reserves

A widely held misconception is that "reserves" are cash deposits held by the company as contingency. Whereas reserves are simply the difference between the value of the company and its debt.

As at 30 September 2023, Welsh Water's "reserves" were:

	£m
Regulatory Capital Value (RCV)	7,365
Net debt	(4,375)
Reserves (or regulatory equity)	<hr/> 2,990 <hr/>

"Reserves" are analogous to householders' equity in their homes i.e. the difference between the value of the home and the outstanding mortgage. Like homeowners, companies can borrow more against the value of the company and reduce reserves (or equity), but it has financial consequences – see Borrowing Money below. Reserves simply represent the additional borrowing capacity potentially available to the company.

2.3 Dividends

Glas Cymru (Welsh Water's owner) is a company limited by guarantee and does not have shareholders. All other water companies have shareholders and need to pay dividends to their shareholders.

In the decade to 2009/10, any financial surplus was returned to customers in the form of a customer rebate – paid as a reduction on the customer's bills starting at £9 in 2003/4 and raising to £22 in 2009/10. A tighter Price Review determination for 2010-15 limited the amount value that was generated and returned to customers. From 2015, any financial surpluses available was used to accelerate investment to maintain and improve services for customers to provide additional funding for social tariffs for those customers struggling to pay their bills.

In 2022/23 we announced “return of value” of £113 million:

- £13 million company contribution to social tariffs
- £100 million investment to improve river water quality (Phosphates & CSOs)

In total, £570 million has been returned to customers since 2001.

3. Permit setting, enforcement and prosecution

3.1 Historical context

Whilst Welsh Water is responsible for maintaining the network, ensuring there is sufficient capacity and meeting new legislative and environmental obligation, much of the network and asset base has been developed over many decades – over a century in many cases – and were not designed to meet today’s requirements or expectations.

With over 36,000km of sewers and 27,000km of water mains, over 800 wastewater treatment works, 69 water treatment works, 2,300 storm overflows (SOs), over 2,500 sewerage pumping stations, our asset base is extensive with almost 3,500 environmental permits associated with them.

The network consists of assets that have been built and designed by numerous different agencies, local government, and private developers, to differing standards dependent on when they were built.

Since the introduction of the Public Health Act 1936, sewerage undertakers have only “adopted” sewers which met a published set of requirements. Such standards remain in place today and, since 1981, have been set out within national guidance documents that are commonly referred to as “Sewers for Adoption”. Those standards have allowed the sector to ensure that newly constructed “mains” drainage systems meet set design criteria for their performance.

Those adoption standards have been voluntary since 1937, allowing developers to choose whether to construct drainage systems to the “Sewers for Adoption” standard. Upon meeting those standards of construction, the sewerage undertaker would then take on ownership and future maintenance responsibility from the developer.

Where the developer chose not to meet the “Sewers for Adoption” specification, they could construct the site drainage to a lower construction standard, one which allowed the use of inferior materials, pipes of smaller diameters and shallower depths, amongst others. The compromise for following those lower, cheaper, standards was that maintenance responsibility fell to the owners and occupiers who drained into them, something that many homeowners were not aware of.

In September 2010, governments in England and Wales committed to transferring many of those privately owned drainage assets to water and sewerage companies, a transfer which took place on 1 October 2011. Before that date, we were responsible for 18,400km of sewer. The transfer is believed to have doubled the length of gravity drainage that we’re responsible for. However, because there were no centralised records of private sewers and drains, constructed between 1937

to 2011, we have yet to map all those transferred assets, let alone assess their condition and undertake planned repairs. The costs of proactively mapping transferred assets were assessed but deemed unaffordable by the industry and our regulators. Consequently, we map them when issues are reported.

On 1 October 2016 a further overnight transfer took place of private sewage pumping stations, which had previously been the responsibility of property owners and occupiers. Following an assessment of over 1,100 stations, over 50% were transferred to us and minor works undertaken to make each one “safe and serviceable”. As with the transfer of gravity assets, we’ve not been funded to a level which allows us to rebuild them to meet the latest Welsh Government standards for adoption.

Whilst the private sewer transfer has been a success for all involved, it resulted in assets of a generally poor condition being transferred to us, many of which are expected to have a lower asset life than the sewers we’d voluntarily adopted over the previous 73¹/₂ years.

In addition to the mandatory transfers outlined above, we’re working proactively with some local authorities and housing associations regarding the voluntary transfer of existing private sewage treatment facilities, which are not currently in our ownership. Because of the voluntary nature of those transfers, those authorities will be expected to undertake some level of upgrade to them, prior to the transfer taking place. Whilst those adoptions will increase our asset base, the risks associated with them at the time of transfer will be significantly lower than with the mandatory transfers of recent years.

3.2 Permits

All of our permits for water discharge activities, our waste operations such as treating sewage sludge (biosolids), or discharges to ground water are issued by the environmental regulators under the Environmental Permitting Regulations (England and Wales) 2016. The regulators set the conditions within the permits that are appropriate to secure the environmental objectives required as well as ensuring standards are met. Permits can also include improvement measures to be met within specified timescales, and any steps needed to be taken during operation of the site. We have almost 3,500 environmental permits all of which are unique to the individual requirements of the sites they are granted for. These permits can include many different requirements and constraints sometimes with many elements for an individual site.

Fig. 1 Example of a permit for Final effluent quality:

14. (a) Subject to paragraph (b) below, the Discharge shall not contain more than:
- (i) 40 milligrammes per litre of biochemical oxygen demand (measured after 5 days at 20°C with nitrification suppressed by the addition of allyl-thiourea);
 - (ii) 21 milligrammes per litre of ammoniacal nitrogen (expressed as N);
 - (iii) 60 milligrammes per litre of suspended solids (measured after drying at 105°C).
- (b) The limit for any of the relevant parameters set out in paragraph (a) above may be exceeded where, in any series of samples of the Discharge taken at regular but randomised intervals in any period of twelve consecutive months as listed in Column 1 of the table at Annex 1 to this consent, no more than the relevant number of samples, as listed in Column 2 of the said table, exceed the applicable limit for that relevant parameter.

Fig. 2 Example of a permit for Storm overflow and overflow setting requirements:

2.3.2 For the discharges specified in table S3.3:

- (a) The discharge shall only occur when and only for as long as the flow passed forward is equal to or greater than the overflow setting indicated due to rainfall and/or snow melt.
- (b) Off-line storm storage must be fully utilised before a discharge occurs. It shall only fill when the flow passed forward is equal to or greater than the overflow setting indicated due to rainfall and/or snow melt and shall be emptied and its contents returned to the continuation flow as soon as reasonably practicable. The minimum off-line storm storage required is specified in table S3.3.
- (c) On-line storm storage must be fully utilised before a discharge occurs. It shall only fill with the excess flows due to rainfall and/or snow melt. The storage shall be emptied and its contents returned to the continuation flow as soon as reasonably practicable. The minimum on-line storm storage required is specified in table S3.3.

Table S3.3 Storm sewage discharge settings						
Effluent(s) and discharge point(s)	Description of discharge	Overflow setting l/s	Maximum size of solid matter	Screen aperture size	Minimum screen capacity flow l/s	Minimum storage capacity m3 (off-line)
A2 Settled storm sewage via Settled Storm Discharge Point	Settled storm sewage	48.1	No greater than 6 mm in more than 1 dimension	6 mm x 6 mm	The screen shall be designed to cope with all flows up to and including the 1 in 5 year storm return period, as a minimum	633

Permits can also change over time in line with changing environmental policies or changing environmental conditions local to the site.

The conditions within our permits are set to ensure compliance with legislation, are appropriate to protect the standards require in the receiving environment and adhere to any national policies.

Variations to existing permits can be requested by DCWW as the operator, or by the NRW/EA as either part of the WI(NEP) process, or as necessary to ensure the permit is protective of the receiving environment, where new information is available on the best available techniques or for other issues

as necessary. For water industry discharges, permits cannot be reviewed within a 4 year period of a variation unless in agreement with the operator. New permit applications, which are few and far between would be if a new requirement is identified, e.g. a new build WwTW.

The process followed is complex, but in simple terms, where DCWW require a new permit or a variation, we would where necessary submit a pre-application to seek advice on the information that is needed for the permit application. Then, a formal application which would be submitted for determination. For those permit changes initiated by the regulator, there would either be a request for information if it were a review of permit, or we would agree a method of submission with the regulator for information for WI(NEP) driven changes. After a determination period, a draft permit is issued for 'operator review'. This gives DCWW chance to check changes are in line with what was requested in a variation application or as per the WI(NEP). Permits are then formally issued.

Permits can be appealed within a specified timescale after issue for a number of reasons including a disagreement on the conditions imposed by the regulator where the regulator varies the permit or if an application is refused. Appeals go to Welsh ministers (or Secretary of State in England).

There is a fee for permit applications under a charging scheme which reflects the effort the regulator has to put into determining the application, the environmental impact or risk and the extent of public participation required. In AMP8, we anticipate fees for applications to vary permit conditions as a requirement of our National Environment Programme will be between £6million and £7million. There are then subsistence charges to support ongoing costs for checking monitoring data and assessing compliance. This is set by an annual schedule of charges, depending upon the permit type and the quality of the discharge conditions. Our current subsistence charges for all our WwTW and WTW discharges amounts to over £5million per annum.

The committee should also be aware that NRW have recently (26th October last) published new technical guidance for permitting storm overflows. We are reviewing the detailed requirements of the new guidance but it will be sometime before we understand the new requirements fully and their potential impact on the programme and cost of improving our storm overflows.

We continue to work with NRW to review permits and amend and agree new permits where necessary. As a result of such reviews, we currently have 147 unpermitted storm overflows which we are in the permit process with NRW, which we believe were built pre-privatisation. We also surrendered over 150 permits where we identified that the asset was no longer in use or it was a duplicate for an existing asset. We agreed in 2016 with our regulators that we would use the process of installing Event and Duration Monitors (EDM) as a reason to survey the asset and identify any permit anomalies. This process has been underway between 2016 and now.

3.3 Enforcement and Prosecution

NRW has a wide range of available enforcement options to address environmental offences which include providing advice and guidance, issuing notices requiring improvements and a return to compliance or prosecution. If considering prosecution, NRW must decide whether it is an

appropriate response or whether an alternative may be more appropriate. NRW have publicly stated that their preference is to agree improvement prior to prosecution due to financial penalties incurred by the Courts being paid to the Treasury, therefore stripping the company of much needed finance that could otherwise be invested in improving infrastructure. As a company without shareholders, there is no alternative source of income to cover such costs.

NRW regularly investigate actual or suspected non-compliance and issue warnings and improvement notices to Welsh Water. In addition, since 2018, Natural Resources Wales has successfully prosecuted Welsh Water three times; it has accepted one Environmental Undertaking made by Welsh Water; and Welsh Water has accepted 9 cautions offered by NRW.

Generally, enforcement and prosecution action against Welsh Water is pursued under the Environmental Permitting Regulations (England and Wales) 2016, and occasionally under the Salmon and Freshwater Fisheries Act 1975. In England the Environment Agency can accept an Enforcement Undertaking (a commitment to address the conduct causing the breach; rectify the consequences of any breach or restoring the position, e.g., funding an environmental eNGO to improve the environment as a way of “offsetting” the harm caused by the incident; or an offer of reparations to those impacted by the incident) for offences under the Environmental Permitting Regulations. However, it is not currently an option in Wales open to NRW, such that in reality there is little opportunity for Welsh Water to offer Environmental Undertakings other than for offences under the Salmon and Freshwater Fisheries Act 1975. This leaves NRW with only prosecution as a last resort, over and above a warning letter or caution, with all fines going to the UK Treasury as opposed to being used on environmental betterment in Wales.

4. Storm overflows (SOs) and environmental impact

Over 60% of our sewer network is a combined sewerage system, meaning that both rainwater and wastewater (from toilets, bathrooms and kitchens) are carried in the same pipes to a sewage treatment works.

When our sewer system is operating normally, combined sewers collect rain water that runs off gutters, drains and roads, as well as sewage. We call this wastewater, which then gets taken to our wastewater treatment works, where it is cleaned, treated and returned safely to the environment to rivers or the sea. Before the early 2000s, there was no coastal sewage treatment in the UK. Significant investment since privatisation has gone into building these coastal wastewater treatment works and improving discharges at our coasts and this has led to Wales having a quarter of the UK's Blue Flag beaches with only 15% of the coastline.

Most of the wastewater network was built over 100 years ago during the Victorian times, if we were designing a system now, we would do it very differently and have separate pipes for sewerage and rainwater. This is how new housing developments are designed.

During heavy rain storms, more water enters the pipes of these older ‘combined’ systems than they are designed to cope with, so they have been designed to safely relieve the pressure through release

points - known as Storm Overflows or SOs. SOs release the flows – which is around 95% surface water - into a river or the sea. Without these release points, the sewerage system would back up, and cause sewage flooding to streets, highways and cause toilets to overflow inside properties.

It is important to point out that SOs are designed to operate during heavy rain, so that if they release wastewater then any sewage present is heavily diluted with rain and surface water into waterbodies which should also be in flood.

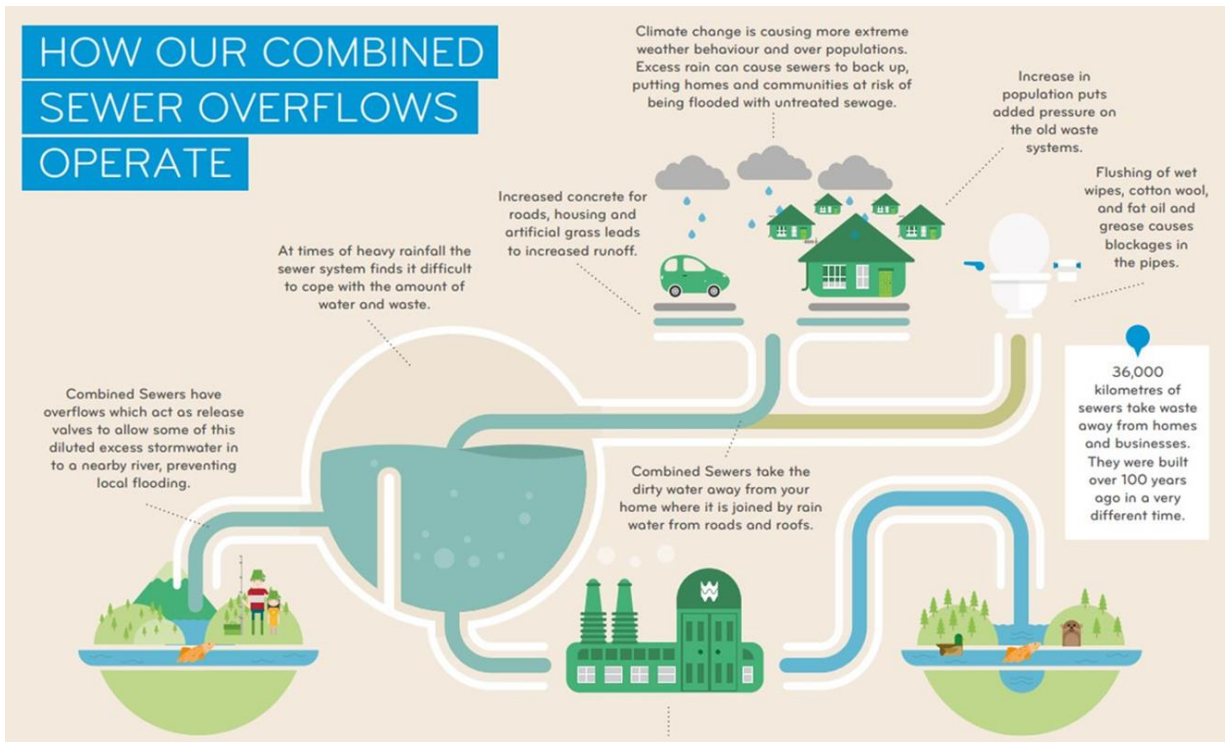


Fig.3

As illustrated above (fig. 3), SOs discharge when the volume of combined surface water and sewerage is greater than that can be treated or stored in storm tanks.

4.1 Storm overflow monitoring

Like most of the UK, our drainage and sewerage infrastructure dates back to the Victorian era, and was designed both to manage surface water runoff from rainfall and sewage from rapidly growing populations. Responsibility for different parts of the system has evolved and divided, such that responsibility for wastewater and the sewerage network falls under water companies, while highway drainage and surface water management is managed separately. However, fundamentally the systems are overlapping, with rainfall and surface water runoff having a major impact on the management of sewerage and wastewater.

Given the combined nature of the system, it was designed with storm overflows (SOs) to ensure that the limited capacity in the network is not overwhelmed during and following heavy rainfall, to mitigate the risk of flooding from the system into homes and external areas.

Normally SOs release highly diluted sewage and rainfall at times when the flows in rivers and streams are high and the impact on the environment should therefore normally be low. Following heavy rainfall flow levels in our network increase 20 fold or more, and some catchments take many days to drain down through the infrastructure. Because of the levels and intensity of rainfall experienced in Wales, and our topography, we rely on SOs to protect our customers from flooding more than is the case in many other water company areas.

We have significantly more SOs per customer than other water companies, particularly those in eastern parts of England. We also have the highest standard average annual rainfall (SAAR) of all the English and Welsh water and sewerage companies.

The combined effects of climate change, population growth and urban creep are having the effect of increasing the frequency and volume of discharges from storm overflows, which in some cases is having a detrimental impact on overall river health. For many years the operation of the some 2,300 SOs in our area was not well understood.

This was because the focus of legislation (principally UWWTD) and our regulators was ensuring that the appropriate capacity was in place to treat minimum flows at treatment works, that the ecological status of rivers, shellfish waters and bathing waters was being improved as required, and that wastewater was being treated to minimum levels of quality before being discharged back to the environment. The regulations recognise the need for SOs to protect customers and communities from sewage flooding that would otherwise occur in the absence of such relief points in combined sewerage systems. SOs can be classified as satisfactory, substandard or unsatisfactory, taking into account a range of factors set out in guidance from NRW.

We have rolled out monitoring of SOs (Event and Duration Monitors - EDMs) over the last 10 years and over 99% of our SOs now have spill event duration monitors (EDM) installed. EDM data allows us to report to the regulator on the frequency and duration of the operation of these assets. This is particularly important for SOs discharging into shellfish and bathing waters where there is often a legal limit on average spill frequency.

All of our EDM data is available on our website. Early next year we will provide near real time information (within one hour) on our website showing SOs that are operating - for bathing waters and high amenity sites initially.

Storm overflow monitoring provides information on the frequency and duration of storm overflow operation (known as Event Duration Monitoring or EDM). We have installed monitoring on almost all assets that we know act as storm overflows including those that have recently been identified without permits or where they are permitted incorrectly. We report the results of our monitoring annually to NRW and the EA and we have published the data annually on our website since 2016 as the monitoring was rolled out. Before 2016 there was limited coverage of these in terms of frequency of operation although the monitoring that NRW and EA have been adopting within rivers, would pick up impacts from all assets discharging, however given the intermittent operation of these assets, it

had been more difficult to identify if any of these assets were causing harm, as opposed to the continuous discharges of treated effluent from wastewater treatment works.

EDM monitoring is important for helping us understand the performance of our networks but frequency and duration are not a good indicator of the ecological impact of a storm overflows in isolation from other factors such as dilution of the spill in the receiving water course. In 2018 we agreed a new methodology for assessing the ecological impact of storm overflows using the Storm Overflow Assessment Framework (SOAF) which we classify as ranging from “Severe” to “No / Very Low”. Using a combination of water quality modelling, invertebrate sampling and aesthetic surveys it sets out a way of estimating the impact of a storm overflow currently and provides the means of determining improvement needed to eliminate its impact.

Our investment programme will ensure that by 2040 we will have reduced the impact of all our storm overflows to “no / very low”. An additional environmentally precautionary step we are adopting is that the design of the improvement will be based on upstream water quality meeting *good* or *excellent* ecological status under the Water Framework Regulations. This means that even if water quality upstream is currently below this standard for any reason, the improved storm overflow will still support *good* or *excellent* ecological status in the water body if those other causes are resolved in future.

The first stage of this programme, assessing the impact of our storm overflows, is underway in the current investment programme with around 800 storm overflows scheduled for investigation. The remaining assessments will be completed in the next investment programme. The results of the first 253 assessments on frequently spilling storm overflows confirms our view that spill frequency on its own is a poor indicator of impact – see table 1 below:

Impact	Sites	Average Spills	Average Duration
Severe +	77	83.1	777.6
High/Very High	42	96.7	865.1
Moderate	51	74.3	577.4
Low	23	94.3	835.5
No / Very low	60	83.6	700.3
Total	253	86.4	751.2

Table 1

The order in which storm overflows are improved will be based on their ecological impact and the environmental sensitivity receiving water body. Storm overflows with the greatest impact discharging to the most sensitive areas scheduled for investment as early in the programme as possible and those with a lower impact will be improved in successive AMP periods.

Just as Welsh Water was a leader in installing EDM monitors, we are now leading the industry in carrying out these environmental impact assessments (SOAF).

The highest priority waters will be those locations where the water body is designated under the Habitats regulations or similar protect location, within 1km of a bathing or shellfish water or the if they are the reason for a water body not achieving good ecological status.

It is important to note that EDM monitors do not measure the volume of the discharge or the environmental impact on the water body. Whilst there's been significant media focus on spill numbers – such as the Top of the Poops website – they do not indicate the environmental impact on the water body, neither are they all considered to be pollution incidents and the vast majority of which occur within the permit conditions agreed with the regulator and have minimal impact due to the highly diluted nature of the discharge into a water body that is also carrying more flow due to the rainfall. The biggest reason for spills on dry days are when blockages occur, primarily due to wet wipes blocking the sewer. These would be classified as pollution incidents and, if we detect these using our EDM monitoring, we self-report to NRW or EA and response as quickly as possible.

The Welsh Government-commissioned report from Stantec, published last week, outlines the options for tackling storm overflows in Wales and the associated cost. The report confirms that all options would cost many billions on pounds, but that the preferred option in Wales of tackling those SOs causing environmental harm as opposed to just operating more frequently, is more affordable. However, all options will require bill increases and will take decades to deliver.

4.2 Source Apportionment

Welsh Water has led on the Source Apportionment Graphical Information System (SAGIS) modelling for sensitive river catchments in Wales, allowing us to build a virtual representation of the river bodies and better understand the impact of our assets on SAC rivers, with all results shared openly. The SAGIS models – that are audited by NRW - also allow us to identify other sources of pollution and test proposed improvements in our discharges to establish their impact on water quality in the river. This has helped us and NRW to identify where our investment can most effectively be directed to have the biggest impact.

By way of example, the results show that rural land use is contributing 84% of the phosphorous load for the Eastern Cleddau and 65% for the Western Cleddau. Our wastewater treatment works are contributing 11% and 22% respectively. SOs are contributing relatively little to the phosphorus loads: 2% and 5% respectively. On the Wye the modelling suggests that our WWTWs contribute 23% of the phosphorous in the SAC waterbody, with SOs accounting for 2% (see Fig. 4 below).

As a result of this work, we agreed with NRW and the Taskforce that we will commit to reducing phosphorous discharges from our WWTWs to SAC rivers by 2032 down to the levels needed to fully comply with our 'fair share' of the overall required reduction, subject to Ofwat approval of the required funding. This will involve tighter phosphorus limits at 159 of our 233 wastewater treatment plants on the five failing SAC rivers, and the removal of 98.3 kg of phosphorus per day from works discharges. 10 The Welsh Government has committed to the establishment of Nutrient Management Boards (NMBs) in each SAC catchment to find the optimal means to achieve the overall targets for nutrients. We are participating fully in this effort.

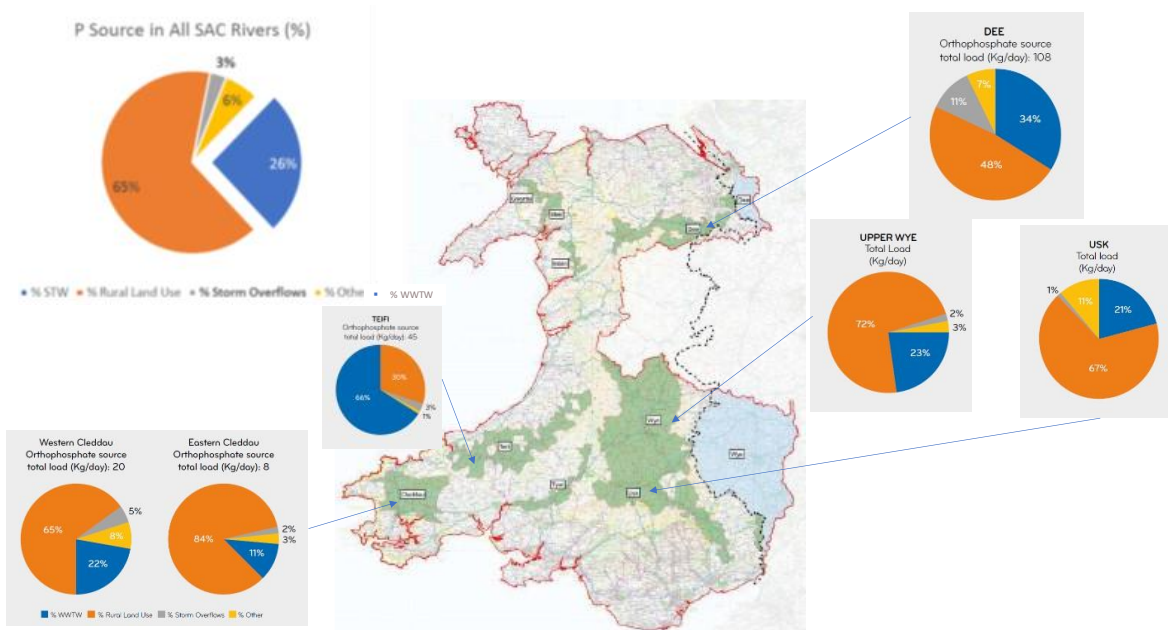


Fig. 4

We have agreed to work collaboratively with NRW and other partners on a project to bring a number of interventions together to improve the Teifi. This river has approximately 70% of the phosphorous load coming from wastewater and we are investing in a number of treatments to get river into compliance. However, we are not only doing improvement works at our works, we plan to work on land management improvements including reducing fertilizer user and developing wetlands to take out more of the phosphorous.

The Welsh Government has committed to the establishment of Nutrient Management Boards (NMBs) in each SAC catchment to find the optimal means to achieve the overall targets for nutrients. We are participating fully in this effort.

It is important to note the above approach will not only apply to SAC rivers, but to other (mostly smaller) rivers where there are also challenges around nutrient levels. These are not being ignored but the SAC rivers have been identified as the highest priority for action in the short to medium term.

4.3 How river water and bathing water quality in Wales compares to other countries

The environmental quality of rivers and bathing waters in Wales are relatively high, with 40% of waterbodies in Wales meeting 'good' Water Framework Directive (WFD) ecological status, compared to 16% of waterbodies in England.

Scotland's Water Framework Directive river water quality data show that 67% of Scottish water bodies are achieving good ecological status. This reflects we believe the large area of Scotland which is of low population density and so anthropogenic impacts causing non-compliance are low.

In terms of river water quality, the State of Natural Resources Report (SoNaRR) 2020 confirms that 44% of rivers in Wales are achieving good ecological status under the [Water Framework Directive 2018 interim classification](#) (see Fig 5 below). We expect to see the next SoNaRR report published in 2025. A range of pressures are compromising the health of our freshwater ecosystems, including climate change; agricultural diffuse, mining legacy, sewage and other pollution; physical river modification; abstraction and invasive non-native species. Fig. 6 provides an international comparison of the ecological status of waterbodies.

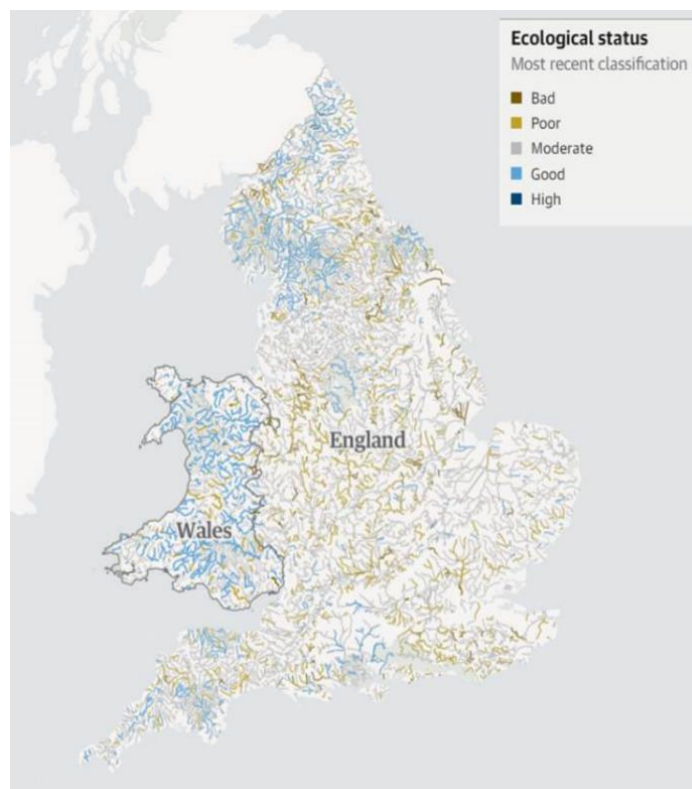


Fig 5: Created and published by The Guardian, on 12 September 2023

Ecological status of surface water bodies
Second River Basin Management Plan

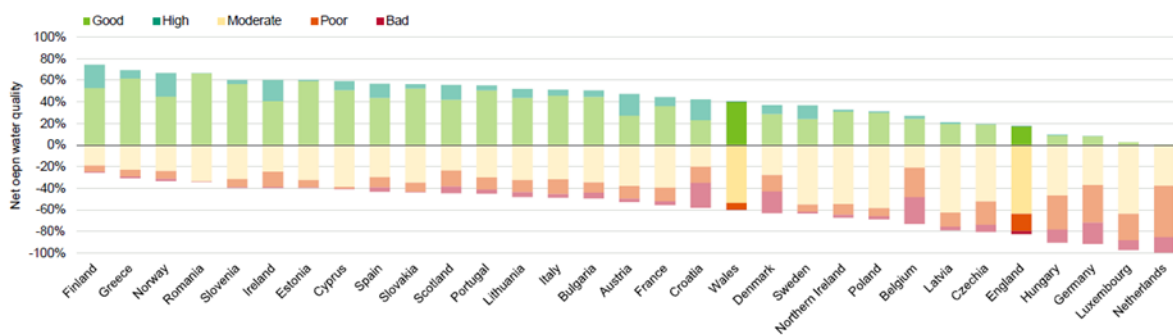


Fig 6: International comparison of ecological status of water bodies

As you can see from Fig 6, Wales has a very low number of “poor” waterbodies but a large number classified as “moderate” with a whole range of “Reasons for Not Achieving Good” status.

Bathing water quality

Coastal waters in Wales are overwhelmingly of high-quality. This is essential to the tourism sector in particular, as well as contributing to wider societal goals such as health and wellbeing.

There are 107 designated Bathing Waters around the coast of Wales, include two new designations in southern areas. In 2022 79% of the 107 designated bathing waters were classed as Excellent. The position is relatively stable and only one designated Bathing Water failed to reach the regulatory standard in 2022 (with the failure attributed primarily to an asset not owned by Welsh Water) and none in recent preceding years.

Bathing water classification for 2022	Wales	England
Bathing water assessed	107	419
Excellent	85 (79.4%)	302 (72.1%)
Good	16 (15.0%)	87 (20.8%)
Sufficient	4 (3.7%)	18 (4.3%)
Poor	1 (0.9%)	12 (2.9%)

Table 2

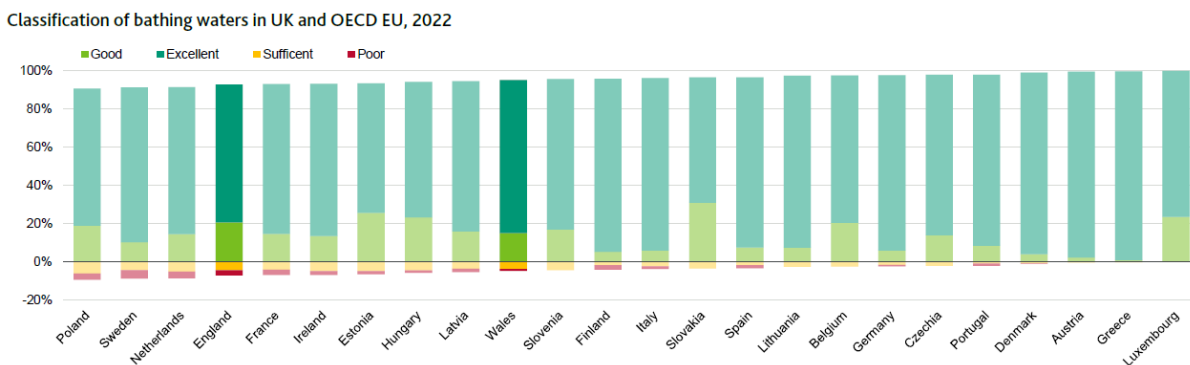
With 2,700 kilometres of coastline - approximately 15% of the total for the United Kingdom – Wales has a quarter of the Blue Flag beaches.

This strong position is largely attributable to investments in wastewater treatment works and networks in coastal areas in previous AMP periods, particularly from 1995 to 2010. Improvements to protect bathing waters focus on measures to reduce concentrations of e. coli and intestinal enterococci in discharges reaching the designated bathing water area.

The WFD also requires specification of protected areas designated for the protection of economically significant shellfish species, and there are a number of designated Shellfish Water Protected Areas in Wales. There has already been significant investment in investigations and improvements including in the Loughor estuary, with extensive modelling in AMP6 to understand the remaining sources of faecal bacteria preventing shellfish from meeting at least Class B. Based on this evidence we are investing to protect the Menai Straits shellfish waters in AMP7 and 8. Other improvements and investigations are planned for other shellfish waters.

We are therefore in a strong position on the quality of coastal and bathing waters in Wales, but we are not complacent. There are bathing and shellfish waters that are at risk of deterioration from wider trends such as impermeable area creep and climate change, on which we are working closely with NRW. The main example of this in AMP8 is Jackson's Bay near Barry which we have found to be affected by the growth in the local sewerage catchments. We plan to reduce the impact of our assets on the Barry bathing waters through implementing our sustainable £100 million RainScape programme as we did in Llanelli between 2010 and 2015 and also between 2015 and 2020.

We want to support the Welsh Government's aspiration to move towards designation of some inland water bodies as bathing waters, an aspiration which is shared with the Wales Environment Link and a number of other stakeholder organisations.



Source: European Environment Agency, Defra, Welsh Government, Moody's Investors Service

Fig 7: International comparison of bathing water classifications

5. *Better River Quality Taskforce (BRQTF) and proposed approach to reduce environmental harm from storm overflows*

Welsh Government is leading a multi stakeholder Better River Quality Taskforce (BRQTF). This was established to “to evaluate the current approach to the management and regulation of overflows in Wales, to set out detailed plans to drive rapid change and improvement” and the development of a “Storm Overflow Action Plan”. The task force includes representatives from WG, Ofwat, Afonydd Cymru, the Consumer Council for Water, DCWW and Hafren Dyfrdwy. The goals of the task force are:

- Supporting the Welsh Government to achieve their environment and climate change ambitions,
- Reducing the adverse impact of any overflow discharges on the environment by targeting investment and taking regulatory action where required to deliver improvements.
- Working within the existing regulatory framework to ensure water and wastewater companies effectively manage and operate their network of sewers. Regulators will use their existing powers to drive the right outcomes and hold companies to account.
- Gathering greater evidence of the impact on our rivers through improved monitoring of both the discharge and the receiving water and through this drive towards truly smart networks making best use of technology and real time control.
- Working with the public to tackle sewer misuse.
- Working with the public and stakeholders to improve the understanding and role of overflows in Wales.

Tackling SOs is seen as only one of several elements that need to be addressed if we are to improve river quality in Wales. The BRQTF also recognise SO’s role in protecting customers and businesses from flooding and historic investment by water companies to reduce impact and improve monitoring and understanding.

Based on the direction from the BRQTF and PR24 Forum Strategic Steer, the approach in Wales differs from England where the focus is on reducing the frequency of spills from SOs. Here the target is to eliminate ecological harm and prevent adverse ecological impact of any SO.

The overall goal endorsed by the Taskforce is to maximise the reductions in ecological harm caused by SO spills. This is reflected also in the Strategic Steers from the Welsh Government and the PR24 Forum (see below). While this will also produce a reduction in the number of spills, this is not the principal objective. Achieving satisfactory status for all our SOs as defined by NRW is the ultimate objective for 2050. Owing to our well advanced SOAF programme we are in a position to target reducing ecological harm as the principal objective and tackle the highest priority SOs on this basis.

This approach has been endorsed by the independent report by Stantec which evaluated a range of options to tackle SO’s and evaluated the costs, the bill impacts on customers and evaluated the carbon impacts and a estimated a cost benefit. The approach planned in Wales delivers

environmental improvement at a lower cost on society than the currently proposed English approach.

There are significant differences in the legislative and regulatory context between England and Wales. In England SO spill frequency has been adopted as a surrogate for impact. Defra's

Storm Overflows Discharge Reduction Plan, published in August 2022, introduced long term spill frequency targets for water companies in England. The headline targets in England are:

- By 2035, English water companies will have: improved all overflows discharging into or near every designated bathing water; and improved 75% of overflows discharging to high priority sites.
- By 2050, no storm overflows will be permitted to operate outside of unusually heavy rainfall or to cause any adverse ecological harm. This means that storm overflows will not be permitted to discharge above an average of 10 rainfall events per year (or less if impact is modelled to occur at that frequency).

The common industry Performance Commitment on SOs prescribed by Ofwat as part of its PR24 methodology is aligned with this approach in England. If our investment plan were developed and incentivised on the basis of targeting the SO spills measure, we would tackle first those SOs that are spilling most frequently but not necessarily causing significant harm (perhaps because of the nature and topography of the catchment, the size of the SO pipe, and the flows in the river). This would clearly not maximise the improvements to the environmental benefits in terms of minimising impact.

The common industry PC also suffers from the problem that the 'performance' is likely to vary by year to year considerably with variations in rainfall patterns, which are likely to dwarf any improvements resulting from our investment plan, at least in the short-term. It would show year on year that those wetter parts of the UK have higher spills yet does not correlate with river water quality which is the outcome we are all seeking.

Therefore, we are following the approach agreed with the Taskforce and the PR24 Forum. Ofwat's proposed SO spills measure is not aligned with this approach, so we are proposing a 'bespoke' Performance Commitment which is aligned with the PR24 Forum Strategic Steers and Welsh Government policy, as the basis of our long-term plan on SOs.

As part of the process of developing our business plan for 2025-30 (PR24) we informed Ofwat that our SO performance measure would be targeting the reduction of environmental harm as opposed to spill numbers, in line with the steer from the PR24 and we have put forward the measure in the business plan submitted to Ofwat on 2nd October.

PR24 Forum Strategic Steers: Storm Overflows

- We expect DCWW to reduce the use of Storm Overflows (SOs) prioritised on the basis of delivering the maximum improvement to the environment in terms of reducing harm. This also applies to currently unpermitted SOs.

- We expect DCWW to work together with NRW to implement an approach to permitting all SOs by 2030 with completed ecological assessments and a plan for reducing ecological harm in line with the wider investment approach.
- Reductions in the numbers of spills are welcome but are not in themselves the priority for action, which should be focused on identifying and addressing SOs causing the greatest impact on the environment.
- We recognise the significant investment estimated to be required to address the problem of SOs causing ecological harm and recognise the need to take a phased approach in order to manage the impact on customer bills, financing and deliverability.
- We expect all DCWW assets to be classified against criteria set out in NRW's Storm Overflow classification guidance by 2030.
- We expect DCWW to invest to increase the proportion of SOs causing no harm (or 'very low' harm) to the environment to 100% by 2040 at the latest including all currently unpermitted SOs. We expect the company to achieve 60% by 2030, and 80% by 2035.
- We expect DCWW to work with local authorities to maximise opportunities from the flood risk management programme where projects can directly or indirectly support the SO programme. We expect the company to be an exemplar on surface water management in Wales.

5.1 Phosphate reduction investment

Phosphorus is an element essential for plant growth and it is in lots of the food we eat and is a key part of fertiliser. When too much reaches the river, along with other nutrients, it can cause algal growth and eutrophication which is harmful to the ecology of the river. There are many sources of phosphorous entering rivers, of which our wastewater treatment works and SOs are just two, with agriculture being another major contributor. Phosphorous is also naturally occurring and is released slowly from natural sources.

Phosphorous levels in many of Wales's rivers are too high, seriously damaging their ecological health. This is a particular problem for Special Areas of Conservation (SAC) rivers, of which there are nine in Wales - Cleddau, Eden, Gwyrfai, Teifi, Tywi, Glaslyn, Dee, Usk and Wye. These rivers are particularly valuable in terms of their biodiversity, including special species such as Atlantic salmon and freshwater pearl mussels.

In 2021 the Joint Nature Conservation Committee (JNCC) recommended that tighter phosphate targets be adopted after reviewing new evidence about the impact of phosphates and the effects of climate change on the ecology of rivers. A subsequent evidence review by NRW showed that 60% of SAC river waterbodies were failing against the new targets.

Phosphate constraints are also impacting economic and community development, with planning rules blocking house building in a number of catchments due to the impact on phosphates. Solving this problem is a major priority for the Welsh Government, which has a target to build 20,000 new low carbon homes to address the housing shortage.

In AMP7 (2020-25), we are investing an additional £100 million from our 'not for profit' dividend to accelerate investment in phosphorous reduction at treatment works in SAC areas. Planned investment is outlined below::

AMP7

- Norton
- Presteigne
- Weobley
- Eign
- Rotherwas
- Leominster
- Builth Well
- Kingstone and Madeley
- Pontrilas
- Llandrindod
- Rhayader
- East Bovilston
- Clyro
- Crosshands
- Eglwysbach
- Llanarth
- Pontyberem
- St Nicholas
- Tattenhall
- Whitchurch
- No Man's Heath
- Malpas
- Farndon

AMP8 (Early Delivery)

- Llanfoist
- Lampeter
- Letterston
- Llanybydder
- Monmouth
- Corwen
- Spittal
- Llandrindod (tighter limit)
- Brecon
- Wolfscastle
- Five Fords

Our plan for phosphorous reduction should be understood as part of the multi-stakeholder effort to tackle this issue, and also in the context of the NEP and the regulatory landscape in Wales.

We have agreed with NRW and the Better River Water Quality Taskforce that we will commit to reducing phosphorous discharges from our wastewater treatment works to SAC rivers by 2032 (with 90% completed by 2030) down to the levels needed to fully comply with our 'fair share' of the overall required reduction, subject to Ofwat approval of the required funding. This will involve tighter phosphorus limits at 159 of our 233 wastewater treatment plants on the five failing SAC rivers, and the removal of 98.3 kg of phosphorus per day from works discharges,

5.2 Storm Overflow Investment

DCWW has invested in storm overflow improvements over multiple 5 yearly investment or Asset Management Plan (AMP) periods since privatisation in 1989. There were significant investment programmes at selected storm overflows between AMP2 and 4 (1995 to 2010). These programmes of work were funded through the NEP to meet to ensure we met the requirements of the Urban Wastewater Treatment Regulations or to meet bathing and shellfish water quality obligations. We also invested a further £115m in the Loughor Estuary in AMP5 and 6 (2010 to 2020) to improve water quality in the area and undertook one of the largest programmes of retrofitting sustainable drainage in the UK as well as introducing novel technology to increase our treatment capacity in the area. More recently investment in Storm Overflows has introduced EDM monitoring and further improvements in bathing and shellfish waters usually in response to our investigations showing that our assets could pose a risk to compliance.

In this investment period, AMP7, we developed and agreed an industry leading program with NRW under the SOAF to investigate the impact of over 800 frequently spilling CSOs throughout AMP7. We are also delivering a small prioritised investment programme on those sites where the cost benefit of reducing the environmental impact of the SO met the criteria set out in the framework. This programme was extended from the original programme agreed in 2019 thanks to the additional investment made available by the board in 2022.

In AMP8 our investment programme will be based on the results of our impact assessments and, subject to approval by Ofwat, will be significantly larger than in AMP7. We plan to eliminate the ecological impact of around 186 sites and this will be the start of a much longer investment programme to reduce the impact of all our storm overflows. A significant difference between AMP7 and 8 is that we will no longer use out a cost benefit assessment to determine if investment should take place.

Our plans are based on our discussions with, and direction received from, the Better River Quality Task Force and PR24 Forum. The Forum has confirmed that our programme should be monitored and incentivised on reducing ecological harm and not spill frequency. We have agreed programme outcomes that will see 60% of our storm overflows having “no” of “very low” impact by 2030, 80% by 2035 and 100% by 2040.

Whilst we are undertaking these enhancements we have also made a significant allowance for storm overflow maintenance to ensure that they meet their permit requirements . Maintenance investment is taken from DCWW's base maintenance allowance and not from the NEP or enhancement programmes. The key areas for maintenance investment in AMP 8 include

- Approximately £31m to restore performance at SO's that have previously been improved to limit the average number of annual discharges (usually near bathing or shellfish waters) but which have breached their agreed trigger points.
- Strategic investigations in the Afan catchment have identified c£41m to be invested on a number of SOs based on a detailed study.
- Approximately £70m in maintenance investment to restore flow pass forward at WWTWs and ensure storm tanks do not operate sooner than they should.
- Separately we will be undertaking maintenance investment on our pumping stations and sewer networks to ensure we deliver our pollution, flooding and compliance performance.

We have previously estimated that to get all our storm overflows down to only operating in exceptional rainfall would cost around £9-14bn. The Welsh Government commissioned report by Stantec released last week estimated the cost at around £11bn. Clearly with only around 1.4million household customers, this level of investment would either have to take many, many years or risk being unaffordable to customers. This is why the approach to tackle SOs causing harm and targeting getting our rivers to good ecological status is a more sensible option, especially in a country where it rains so much more. The Stantec report estimates this to cost around £3bn which aligns with our plan and target out to 2040.

5.3 Using nature-based solutions

We have used a number of nature-based solutions to reduce the frequency and impact of CSO discharges. These include the development of wetlands and also sustainable urban drainage schemes such as RainScape in Llanelli and Green Grangetown in Cardiff. We are committed to using more nature based solutions in future investment periods.

RainScape Llanelli

We invested £115 million across Llanelli and Gowerton in our innovative RainScape work between 2012 and 2020.

RainScape is Welsh Water's approach to managing surface water and reducing sewer flooding by separating rain water from the existing system, slowing down the rate it enters the network and by redirecting it to local rivers and watercourses, and in some cases, removing it completely. It helps reduce sewer flooding and pollution and creates greener, cleaner communities for us to live in.

Our RainScape work was particularly needed in Llanelli as the area sees almost as much storm water in its network as Swansea, despite the fact that Swansea serves three times the number of properties, and three times the area compared with Llanelli.

With the help of contractor partners, Morgan Sindall, we have completed 36 RainScape projects in the Llanelli area since the project was launched in 2012. This has involved laying around 14 miles of new pipework and kerb drainage, tunnelling just under one mile underground to create rainwater sewers and planting almost 10,000 plants and trees in swales, planters and basins.

RainScape catches rainwater and slows down the speed at which it goes into our sewer network using a range of interventions:

- Basins and Planters

Shallow basins, often filled with plants, catch and clean the water that runs from roofs and road before soaking into the ground or slowly making its way into our sewers.

- Swales

Long, shallow channels, often filled with plants and trees, catches, slows down and cleans rainwater before soaking into the ground or slowly making its way into our sewers.

- Porous paving

Paving with lots of tiny holes which allow water to pass through and soak into the ground, rather than running straight into our sewers.

- Grass channels

Long strips of grass that can be put on streets to help absorb rainwater.

- Underground storage

Underground storage boxes which catch water during heavy rainfall before either soaking into the ground or slowly running it into our sewers.

RainScape schemes are the most sustainable ways to reduce SO “spills” but they require partnerships with local authorities and landowners if they are to be delivered at scale.

Wetlands

Constructed wetlands are engineered to mimic the physical, chemical, and biological processes occurring in natural wetlands. Wetlands work by taking partially treated wastewater and passing it through a series of interconnected ponds. All the ponds are planted with native aquatic species such as iris, rush, marsh marigold and watercress.

The wetlands naturally remove ammonia, nitrogen and phosphate. Wetlands are a much needed solution for some of our smaller wastewater treatment works where conventional solutions may not be possible, or may be too expensive or too carbon-intensive infrastructure. Wetlands also create fabulous rich habitats for local wildlife.

As well as providing water treatment benefits, wetlands are a rich and valuable habitat for biodiversity. Depending on the site of the wetlands and the land footprint required, they are often a

lower cost solution compared to conventional engineered approach, and don't require external chemicals and most of the time require zero energy demand.

Although a wetlands will not always be suitable, where they can confidently provide the water quality needs, we commit to working with wetlands and other nature based solutions, for the benefit of our rivers and biodiversity.

As part of our wetlands programme, 7 wastewater treatment works are progressing through feasibility studies, to understand if they would support a wetland solution to the water quality parameters required at site. A partnership wetlands framework is being advanced to enable Welsh Water to collaborate with catchment partners and deliver multiple benefit solutions.

All PR24 Nutrient investment drivers are being screened for Nature Based Solutions (NBS), as we aim to embed NBS as a business as usual option for us.

Our first collaborative wetlands in Herefordshire received flows in September 2022. This wetland is owned and managed by Herefordshire Council to deliver nutrient credits to the development sector. The scheme has been a multisector collaboration, and the first of its kind.

6. Cardigan Wastewater Treatment Works

Cardigan Wastewater Treatment Works (WwTW) was built in 2004 and commissioned over the course of four years. The site serves a population of 5,707. This covers the Cardigan area, Gwbert, Penparc and St Dogmaels. The works was built using a treatment process which uses membranes to filter and treat sewage. This process was chosen for several characteristics, not only was it innovative new technology, but the small footprint meant it could be constructed within the existing boundary of the treatment works. The process also, by its nature, provides the treated effluent disinfection required given the proximity of the treated effluent outfall to the designated bathing water at Poppit West.

However parts of the sewerage network draining to the sewage works suffers from seawater infiltration during high or spring tides which leads to the wide variation in the salinity of the sewage arriving at the works and this, in turn, has a negative impact on the ability of the membrane process to treat the volume required. The bacteria in the treatment process excrete an enzyme to protect themselves from the salinity. That enzyme coats the membrane reducing the flows that pass through the membrane and forward through the plant. This was not known at the time of installation, and it is the change in salinity that triggers this response, so different tide heights cause differing concentrations of seawater mixing with the sewage, impeding flows passing through the process.

Flows which cannot pass through the membrane received partial treatment, they are screened, through normal 6mm screens and then through a further 1mm screening process and then are settled in tanks, to remove the solids. It therefore incorrect to say that raw sewage is discharged. This level of treatment is equivalent to that which is released into the environment from the hundreds of private septic tanks in the catchment.

We have already made changes and alterations to the site that has successfully improved the performance of the membrane process but the treatment process has deteriorated again and this has led us to the decision to replace the treatment process. Given one of the characteristics of a membrane plant was its very small footprint, any replacement scheme becomes a very large and complex operation, and as such we have to build a much larger process and keep the existing plant in operation until we can switch over. This requires planning permissions and expansion of the site.

We agreed with NRW that we needed to find a process that could operate successfully with varying levels of seawater present in the sewage, so we agreed to pilot two different processes over a 12 month period to see which process could operate successfully in these difficult conditions. One of the processes we trialled has been found to operate successfully and so the detailed design is under way and the funds to carry this wholesale rebuild are included in our AMP8 investment plan.

In 2018 we carried out a detailed study into the estuary, the factors which impact water quality and particularly the bathing water at Poppit Sands. That study showed that the storm tank effluent from Cardigan WwTW, contributes around 1% of the pollution load within the estuary, in comparison to 30% coming down the Teifi river and 60% down the river in wet weather. Poppit West bathing water has achieved the highest standard *excellent* classification every year between 2018 and 2022. The regulatory responsibility for river and marine water quality sampling rests with NRW and we are not

aware that they have any data that points to any significant impact from the treatment works discharges.

We are currently in the detailed design phase for the new works. Whilst we aim to start building the works in 2025, if we can accelerate the programme, we will.

The timeline below sets out the work we have done specifically related to Cardigan WwTW flow compliance.

Date	Correspondence Type	Comment
24 th June 2014	Letter from NRW to DCWW	NRW undertook their first assessment of pass forward flow (PFF) sites by estimating whether we were treating the required maximum flows based on a crude assessment of whether max volume treated equated to 3 x DWF (“dry weather flow”). This caused them to question 153 sites.
29 th July 2014	Meeting	DCWW explained that the NRW assessment was too crude and did not relate directly to the flow conditions. We proposed a flow methodology which they noted was a positive step and welcomed us adopting this to generate an annual self-reporting process for FPF compliance risk. *
24 th Sept 2014	Letter from DCWW to NRW	Applying this new agreed methodology to all the sites with DWF meters we responded to NRW letter of 24 th June reporting a number of sites at risk of not treating flows, including Cardigan.
9 th July 2015	OSM inspection at Cardigan	NRW inspected the works and noted 1 breach of permit noting there was flow that would have been discharged to the Teifi without passing through the treatment process
10 th August 2015	Compliance Assessment Report (CAR) issued by NRW to DCWW on Cardigan	Requesting response on permit breach for using storm tanks before a storm event and not treating the required flow – 7 actions on DCWW
04 September 2015	DCWW response to NRW Compliance Assessment Report (CAR)	We responded to all 7 actions and NRW confirmed they were happy with response. We agreed to accelerate drainage study for the catchment and any network defects found as part of the survey would be resolved. We also committed to installing EDM monitoring across our sites in 2016 in order to refine the FPF methodology by

		making possible accurate analysis of storm tanks flows.
2015-2019		<p>Various measures taken to improve the effectiveness of Cardigan were delivered including:</p> <ul style="list-style-type: none"> • Replaced storm screens. • Created more storm capacity to ensure we have enough for permit requirement and flow balancing. • Replaced 50% of the membranes (another 50% being done in 2023) • Replaced inlet control PLC. • Completed the drainage study (SDP) and identified hotspot areas for inflows. • Undertook work on valves in network. • Lined 197m sewer along the Strand in Cardigan • Increased the cleaning cycle for the membranes.
23 rd August 2019	Environmental Permit Regulations (EPR) Assessment Audit Inspection at Cardigan wwtw by NRW	NRW inspected the works and noted issues with flows and storm tanks.
22 nd November 2019	2 CAR forms issued by NRW to DCWW	Issues noted with Flow and Storm tanks – NRW requested a plan of works to prevent untreated sewage being discharged due to high levels of salinity
19 December 2019	Meeting regarding Cardigan WwTW	DCWW met with NRW to discuss saline intrusion and issues at Cardigan following on from the issue of CARs after an EPR inspection
23 January 2020	Statutory Enforcement notice – Cardigan#1	Notice issued for 2 breaches of permit at Cardigan
28 May 2020	Statutory Notice response by DCWW – Cardigan#1	Response to notice sent to NRW outlining investigations to date and planned pilot trial of different processes able to cope with saline environment.
1 st October 2020	Statutory Enforcement Notice– Cardigan#2	Notice for permit breaches as a follow on to previous notice, requesting further work and pilot trials of the alternative treatment processes to be undertaken by Jan 2022.
13 th Jan 2022	Statutory Notice response by DCWW – Cardigan#2	Pilot plant study report and saline investigation reports sent to NRW. This successfully identified that one of the piloted

		processes would work with the salinity present, but the installation of that process would require a complete works rebuild.
23 rd 2023	October NRW issue new Enforcement Notice on Cardigan #3	Notice in response to DCWW letter of 13 th January acknowledging the work done to assess treatment options and the work to reduce salinity. It requires DCWW to inform NRW before 31/3/25, when, during the period 2025-2030, the full solution (rebuild of the treatment works) will be delivered.

* In their pre-read document for the Annual Review of 2014 Performance NRW noted that *“DCWW have developed an agreed methodology for assessing Pass Forward Flow Compliance and are carrying out this assessment annually. Any failing sites are self-reported to NRW and the required improvements are developed and delivered in line with the Dry Weather Flow Methodology”*.

It was disingenuous of the BBC and Professor Hammond to assert that “they uncovered this”. We have been open with our regulators throughout this whole period and we shared with the BBC and Professor Hammond the data that we had been also supplying NRW every 6 months since 2016.

We have complained formally to the BBC about their coverage of this issue.

6.1 Regulatory Reporting of relevant data

Since 2014 DCWW has self-reported performance against FPF to our environmental regulators. By 2018 this turned into a series of annual letters to EA and NRW regarding our self-assessment of compliance and then a series of six-monthly meetings with both regulators setting out our progress with a 5-step process: root cause analysis, solution development, delivery, monitoring (where we assess if the intervention has been successful and effective), and handover as compliant.

Since 2022, with the installation of the new AMP7 flow meters and the new industry guidance around how to assess compliance, there is much greater accuracy to the assessment of FPF compliance. As a consequence, we have seen an increase in sites being assessed as non-compliant, the causes of which are analysed, and solutions developed and delivered.

The table below is the picture of flow compliance reported to NRW and EA over the last few years. Clearly with the bulk of the new flow meters installed in the last 12 months, flow compliance for 2023 reporting will be much larger but this will be the peak and subsequent years will reduce as we tackle these sites.

Stage	Number of Sites								
	2013	2015	2016	2017	2018	2019	2020	2021	2022 ⁴
<i>Progressing with RCA</i>	0	0	0	0	0	1	0	0	10
<i>Solution Development</i>	1	0	2	0	0	1	4	6	20
<i>In Delivery</i>	6	0	2	3	1	3	1	7	7
<i>Monitoring & Handover</i>	3	2	0	1	1	5	4	2	10
<i>Total Ongoing</i>	10	2	4	4	2	10	9	15	47
<i>Total Resolved (Compliant)</i>	17	6	1	2	2	1	1	9	0

We have committed to NRW and EA that all the sites listed above up to and including 2022 will be resolved during AMP7, apart from Cardigan, which is set out separately, and Dale WwTW, where, in agreement with NRW, we are examining the options to remove the treatments all together and pump the sewage away to a nearby WwTW. Both sites will be resolved during AMP8.

As can be seen from the 2022 list where a good number of the sites identified have seen a solution completed, or are in progress, within a year. Some of the reasons for non-compliance are data recording issues, and some are minor fixes like new impellers on pumps or improved control software.

Since 2018 a summary of FPF compliance has been included in the Annual Performance Meetings the company holds with NRW/EA/OFWAT and more recently including Welsh Government.

We have also included flow compliance within the Annual Risk and Compliance Statements for 2021/22 and 2022/23, given the material number of sites shown to be non-compliant following the installation of the new flow meters and the agreement of the new methodology.

7. Environmental Performance Assessment (The text below is the same as that included in the letter sent from Peter Perry to the Chair of the Committee on 4th August)

Despite the disappointment of being downgraded to a 2* Environmental Performance Assessment (EPA) rating in 2022, I want to assure you that we will be doing all we can to recover this and I thought it would be helpful if I set out the recent trend against these key environmental metrics contributing to the EPA.

Year	WWTW (Waste water treatment works – 597 in total)	WWTW Discharge Permit Compliance	Serious pollutions	Total pollutions	Self-reporting of pollution	EPA Rating
2019	5	98.3%	2	95	73%	3*
2020	3	99.7%	3	77	80%	4*
2021	5	98.3%	3	83	76%	3*
2022	6	98.7%	5	89 ¹	69%	2*

(¹ 89 total incidents was the 2nd lowest number of incidents recorded by Water & Sewerage Companies in England and Wales in 2022).

In line with our commitment to the First Minister, our Board places the highest priority on achieving the best possible standards of environmental performance. We take great pride in Wales having a significantly better record of waterbodies’ ecological performance than England, and in the number of blue flag bathing beaches in Wales. That pride is not just at Board level – it is shared by our people throughout the company, particularly on the wastewater side of our business, whose recent engagement survey results show that they are deeply committed to what they do for the environment and for Wales. That is why moving from 3* to 2* EPA as a consequence of the assessment placed on the 2 serious pollution incidents was of such significance to us.

Not as an excuse, but as an important factor in terms of our overall pollution performance, the drought and high temperatures experienced in 2022 should be taken into account when assessing our pollution performance. During the drought we saw some of the lowest ever river levels in Wales whereby any blockage leading to a sewage spill had a higher impact. Similarly, the lower flows in sewers saw our blockage rate increase by 7% leading to an increased risk of pollution.

The primary reason for the dip to 2* EPA rating relates to a slight increase (2) in serious pollution incidents. The incidents were:

- **Crundale, Pembrokeshire** – a third party discharge from a local trader caused our pumping station to block and an emergency overflow activated. Regrettably, our remote telemetry alarm did not activate at the time. This has subsequently been rectified and similar installations inspected across Wales.

- **Cadoxton, Barry** – a connection was made by a developer to an abandoned sewer without our knowledge. We will continue close liaison with developers, but it is difficult to predict this type of incident.

- **Kilgetty sewage pumping station, Pembrokeshire** – there was a blockage on the final chamber before the pumps due to wet wipe detritus. We will therefore increase future inspections at the site.

- **Bridgend** – the incident was caused by a sewer blockage. We have increased inspection and monitoring to prevent recurrence.

- **Trebanos waste water treatment works, Swansea** – the discharge of storm water on this occasion was compliant with the treatment work’s permit, but it was still designated as a pollution incident by Natural Resources Wales. We are investing over £20m to improve the the plant in our next regulatory period 2025 – 2030.

As a means of comparison with performance across the sector the table below shows that two companies had more than 10 serious pollutions incidents and only two reported zero such incidents.

Number of Serious Incidents 2022	0 incidents	1 incident	2 incidents	4 incidents	5 incidents	> 10 Incidents	> 15 incidents
Number of Water Companies	2	1	1	1	2	1	1*

* 19 serious incidents were actually reported

In terms of total non-serious pollution, the incidents occurred as follows;

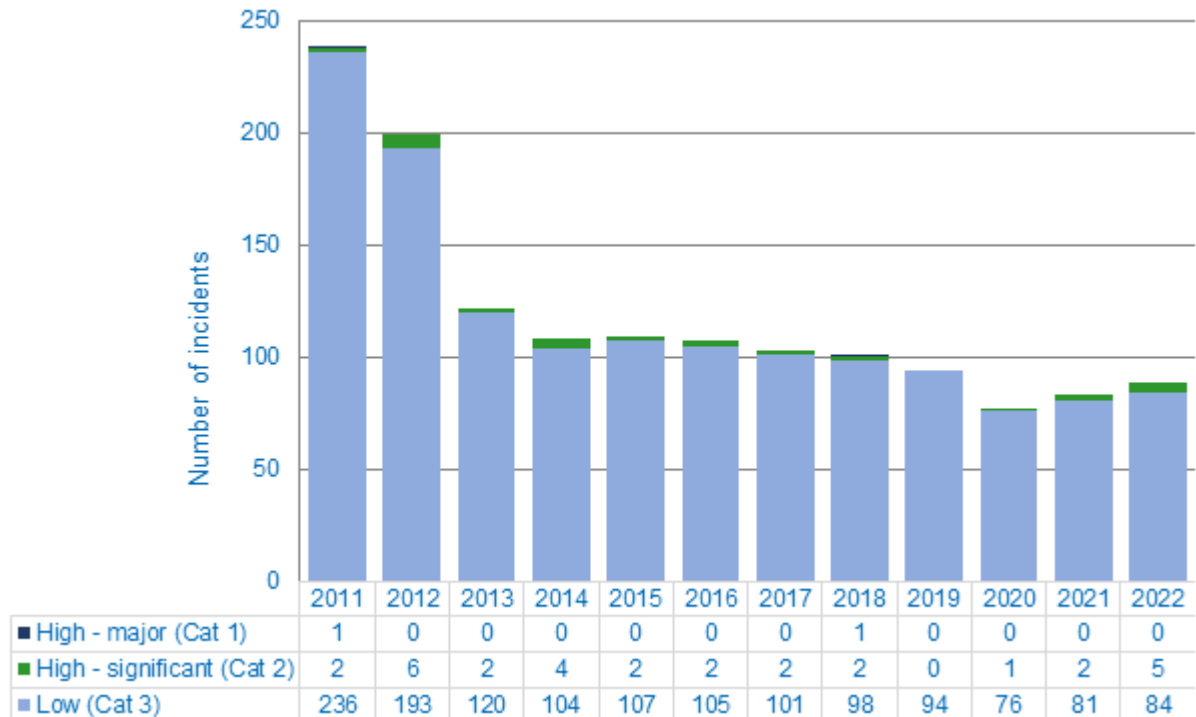
Year	Foul Sewer	Combined Storm Overflow	Pumped Sewer	Pumping Station	Treatment Works
2021	37	15	12	12	8
2022	47*	9	4	18**	11***

* Increase due to low flows in sewers due to 2022 drought conditions

** Increase due to blockages and minor levels of equipment failure

*** Increase linked to low river levels into which treated effluent discharged and due to drought conditions had more impact / was more visible

The table below shows the total pollution incidents per year since 2011.



The above data and more historical information is used to develop and implement our evidence-led improvement plans.

We have a comprehensive pollution reduction strategy combining a range of specific improvement activities which I have summarised below:

- AMP7 (2020 – 2025) Capital Investment** - £52m has been allocated to reduce pollution risk. In addition, planned maintenance of sewers, storm overflows, sewage pumping stations and wastewater treatment works covered in our overall £830m waste water investment programme in AMP7.
- Sewer Remote Monitoring** – early predictive warning alarms to enable earliest intervention, forming part of our wider ‘Smart Network’ programme. This combines real time data with a data science analytical approach to model our network and target preventative interventions. We have also increased the inspection frequency of sewer pumping mains, particularly those which are known serious incident risk assets. These monitors have helped us reduce sewer flooding (arguably the worst type of service failure for our customers) and where we have the best performance records in the industry despite the high rainfall in Wales.
- For above ground assets such as sewage pumping stations and treatment works we are installing new remote monitoring to confirm pumping capacity and flow measurement.
- High Risk Asset Emergency Plans** – specific plans aimed at preventing potential high impact incidents. Including assessment and plans to deal with factors such as loss of mains power.

- **‘Stop the Block’ Campaign** – with over 90% of first time pollutions attributable to sewer blockages caused by wet wipes containing plastic, this is our effort to raise public awareness generally to prevent ‘sewer abuse’ but to target communities with emerging or known blockage history. This also includes working with traders to reduce fat and oil disposal to sewers, with the power to prosecute persistent offenders. We would welcome Welsh and UK Governments including these items in the list of banned single use plastic items.
- **Capability and engagement of our people** – we invest in providing our people with the latest maintenance equipment and the training to go with it. We have a sewer jetting simulation rig at our training centre in Abercynon. The awareness of preventing pollution and protecting the environment more generally is the subject of team meetings / briefings and is supported from the Executive team through communication such as my live call to all colleagues each month. We have also invested in River Quality Liaison Managers and more Pollution Prevention Technicians covering Wales, who interact daily with local communities and interest groups in river catchment areas. Our waste water teams are provided with performance target information and encouraged to contribute to our improvement plans.

Overarching our improvement plans deployment is regular oversight and constructive challenge from our Executive team and our Board. The Quality & Safety Committee of our Board (QSC), is unique in the sector, and is responsible for the detailed scrutiny of our performance which underlies it holding our management to account. It is also closely involved with the development of environmental improvement strategies. It includes an independent expert advisor (a former strategy Director of a leading water company and currently a respected environmental consultant) to aid scrutiny and to provide challenge in terms of our deployment of effective improvement plans and contemporary use of technology etc.

In terms of lessons learned from 2022 I would summarise as follows:

- We have an increasing level of remote monitoring technology equipment installed at our assets. Ensuring a consistent level of management oversight of the operation and maintenance of this technology is critically important. This is linked to the Crundale incident referenced above.
- Linked to the above, we will also continue to roll out remote monitoring equipment to confirm pump operation and equipment is online and performing to expected standard status.
- Ensuring that we are targeting future investment to mitigate potentially high risk assets – this includes £170m to replace strategic sewer pumping mains in north and south Wales. We will also increase levels of capital maintenance with a proposal to double sewer maintenance by £50m in AMP 8 (2025 – 2030).
- Continue to develop our Smart Network capability, with a sustained level of focus on potential new technology and ways of working to prevent pollution risk. (See *Comparing Performance with Other Companies* section below).

- Continue with public engagement to reduce the incidence of sewer blockages and continue to lobby for a plastic wet wipe ban in Wales.
- Our serious pollution risk assessment indicates that the greatest threat in terms of future incident lies with failure of a number of strategic sewage pumping mains. Such as the South East Wales Coastal Main, Kinmel Main in north Wales and the Bynea Main in south west Wales. We have included these in our AMP 8 investment plans. Clearly this will need regulatory approval to help mitigate these significant risks.

Given the scale of the challenge, with the number of assets, we are targeting returning to a 3-star performing company in 2024 and our AMP8 investment plan will allow us to further target returning to a 4-star company.

8. Ofwat Water Company Performance Report 2022/23

In October 2023 Ofwat published their Water Company Performance Report for 2022/23. This report assesses and compares the annual performance achieved on 12 common measures by all water and wastewater companies in England and Wales.

Each company's assessment is based on performance on 12 common performance metrics.

Ofwat groups companies into three categories relative to each other (leading, average and lagging behind) based on how they have performed against the performance commitment levels.

In 2022/23 Ofwat has not assessed any company as 'leading'. Ofwat requires companies in the lagging behind category to publish service commitment plans, outlining when and how customers will receive the service they expect.

Welsh Water has met or exceeded its performance commitments in 5 out of 12 areas and is a top performer for the industry on internal sewer flooding. However, Ofwat assessed performance in the other 7 areas as being behind expectations and requiring and as a result, categorised Welsh Water as 'lagging behind'.

We have prepared a Service Commitment Plan that sets out the actions being taken as part of a recovery plan to return those performance levels assessed as not meeting expectations to the targeted levels our customers, stakeholders and regulators rightly expect.

Action plans have been developed based on a detailed understanding of the drivers of historic performance. These plans were already being proactively delivered as part of a recovery plan to return performance to targetted levels as quickly as possible. These are now being formalised and shared with Ofwat.

Root cause analysis has helped shaped the actions and prioritisation of those actions to return performance to targeted levels.

This service commitment plan addresses performance in the following areas:

- Leakage
- Per capita consumption
- Supply interruptions
- Drinking water quality
- Mains repairs
- Pollutions
- Treatment works compliance

Individual sections on each of the performance measures considers:

- Root cause analysis of underperformance
- Clear actions based on those root causes
- Benefits linked to those actions
- Expected forward trajectory of performance for future years

9. Business Plan 2025-30

Dŵr Cymru Welsh Water has submitted its proposed Business Plan (the 'Plan') for 2025-30 to Ofwat, the water industry regulator.

If approved, the Plan will result in the company's biggest ever investment programme, worth £3.5 billion investment over the five years, which will be equivalent to a 68% increase on the investment between 2020 and 2025.

A key focus of the Plan is to adopt a collaborative approach to reducing its impact on the environment, in particular playing its part in helping improve river water quality. Welsh Water is committing to invest nearly £1.9 billion in the environment between 2025 and 2030 – 84% more than across 2020-25. This will include substantially reducing phosphorous discharges from wastewater treatment to rivers in Special Areas of Conservation and starting on a multi-AMP programme to stop its network of 2,300 storm overflows causing ecological harm to rivers in its operating area.

Based on current performance (2022/23), the company's other key commitments by 2030 include:

- Improving **drinking water compliance and reducing by 57% contacts from customers about tap water quality** ;
- **reducing leakage by a quarter** in its network (against 2019-20 baseline) and helping customers address leaks in their homes and businesses;
- **reducing the total number of pollution incidents by 24%**;
- working towards a 'lead free Wales' by **replacing 7,500 customers' lead pipes**;
- **delivering £42 million of savings** on operating costs through efficiencies and innovative ways of working
- **contributing £13 million a year between 2025-30** to help maintain its social tariffs schemes and provide capacity to increase their coverage from 133,000 to 190,000 customers

By delivering this Plan, Welsh Water will contribute even more to the Welsh economy, building on the £1 billion it contributes now each year, and supporting more than 9,000 full time jobs. The Plan also reaffirms its intention to become a carbon neutral company by 2040, finding ways to deliver a major capital investment programme in low carbon and nature-friendly ways.

To support funding this ambitious and far-reaching investment programme, the average monthly bill will need to be £5 higher in 2025, and £10 by 2030. The company’s research has shown that 84% of customers find the plan acceptable – the highest in the sector. Recognising the ongoing cost-of-living challenges facing its customers, Welsh Water plans to increase the sector-leading support it provides to customers in vulnerable circumstances, deploying funding made possible by its not-for-profit status.

The development of this five year Plan has been shaped by household and business customers and by the strategic steers set by the PR24 Forum led by Welsh Government. It prioritises improving river water quality and addressing the challenge of storm overflows, enhancing key services, and strengthening resilience against the challenges facing the company, in particular climate change.

10. Customer Bills

As the charts below show, whilst the overall bill is second highest, looking at the cost of the bill separately for water and wastewater services points towards the underlying reason for the “high” bill. The water element of the bill is amongst the lowest in the sector, but the wastewater element of the bill is significantly higher. Whilst there was significant investment pre-privatisation in the treatment of sewage discharged to rivers and therefore paid for by taxpayers, the treatment of sewage discharged to the seas was only dealt with post-privatisation and therefore paid for by customers. Companies with the highest proportion of coastal cities, towns and communities have the highest wastewater bills.

	Total		Water		Waste
South West*	526	Wessex	261	South West	310
Wessex	504	Thames	258	DCWW	306
DCWW	499	Anglian	222	Anglian	270
Anglian	492	South West	216	Southern	253
Thames	456	Severn Trent	213	Yorkshire	248
Yorkshire	446	United Utilities	210	Wessex	243
United Utilities	443	Yorkshire	198	United Utilities	233
Southern	439	Hafren Dyfrdwy	195	Severn Trent	206
Severn Trent	419	DCWW	193	Northumbrian	203
Northumbrian	391	Northumbrian	188	Thames	198
Hafren Dyfrdwy	372	Southern	186	Hafren Dyfrdwy	177
Average	<u>453</u>		<u>213</u>		<u>241</u>

* adding back the £50 rebate from the UK Government

As Wales has 15% of the UK’s coastline (compared to 5% of the population), significantly more investment was required to meet increased bathing water quality standards. All but one designated

bathing waters in Wales meet at least “good” water quality standards as a result of the investment over the past 30 years and 80% meet “Excellent” standard.

Whilst, our water bill has been high compared to the rest of the sector since privatisation. Comparing price increases across the sector, our bill has increased only 6% in real terms (2022/3 prices, using CPIH) since Glas acquired Welsh Water as a not for profit company in 2001. This compares to increases of up to 35% in other companies. For over a decade we kept bill increases below the rate of inflation whilst also significantly increasing our financial support for customers struggling to pay their bills which is sector leading. This is funded in part by financial surpluses that in some companies would be used to pay dividends to shareholders. This contribution is expected to total £60m in the five years to 2025.

Early analysis of companies business plans for 2025-30 show that the average household bill will increase by 32% compared to Welsh Water’s projected increase of 26%. The highest proposed increase in the sector is 66% over the period. However, having compared the proposed increases by all of the companies in the water sector, by 2030, our bill expected to be the 7th highest in the sector.