UUWR_12

PR24 Draft Determination: UUW Representation

Area of representation: Internal Sewer Flooding

August 2024

This document outlines UUW's representations for the internal sewer flooding performance commitment.

Reference to draft determination documents: PR24 draft determinations: Delivering outcomes for customers and the environment, page 106-109; PR24-DD-PCM_Internal-Sewer-Flooding.xlsx; PR24-DD-ODI-Rates.xlsx (WaSC rates)

United Utilities

Water for the North West

1. Key points

- **Ofwat's approach to setting a common PCL for this performance commitment fails to take account of local exogenous factors that are outside of management control. We do not agree that this is an appropriate approach.** Ofwat's draft determination fails to account for the significant environmental differences, other than scale, between company regions and therefore creates an inequitable stretch across the industry with some companies facing targets that are easily met and others being presented with exceptionally challenging targets.
- **We agree that it is critical that companies work hard to avoid sewer flooding incidents:** Internal sewer flooding is one of the worst service failures customers can experience. We take great care to ensure that recovery from an incident is undertaken in a sensitive and supportive way, recognising the impact sewer flooding incidents have on customers. We have also invested in operational and capital solutions to reduce the risk of sewer flooding incidents, including interventions to protect against hydraulic flood risk at over 500 properties and the deployment of over 17,500 in-sewer monitors in AMP7. However, the likelihood of sewer flooding incidents is significantly impacted by regional environmental differences between companies.
- **We recognise, and take extremely seriously, our statutory responsibility to effectually drain our area:** However, this should not be conflated with an unrealistic suggestion that companies can or should upgrade networks to fully accommodate all flows associated with exceptional weather events. This is particularly true given Ofwat's historic position that expenditure to reduce sewer flooding risk should be cost beneficial.
- **UUW has a unique combination of operating circumstances that compound to make attaining a common target of 1.16 incidents per 10,000 sewer connections by FY30 exceptionally challenging:** These exogenous variables include 40% higher than average urban rainfall and the highest proportion of public combined sewers in the industry. Combined sewers have less hydraulic capacity than separate systems during periods of high rainfall with the result that a high prevalence of combined sewer compounds the effect of urban rainfall on internal sewer flooding incident levels (and vice versa). These two factors therefore cannot be considered in isolation.
- **We refute Ofwat's view that the proportion of combined sewers in a region is within management control:** For UUW to attain the industry average proportion of combined *public* sewers (33%), we would have to separate nearly 9000 km of combined sewers at a cost of over £13 billion. Work done by Stantec for Defra for the SODRP implied that it would cost UUW circa £80-£140bn to remove all combined sewers[1]. No company has been funded for this level of activity historically, which would have not been cost-beneficial, and therefore it is unreasonable to expect that companies could have reduced their level of combined sewers since their historical inheritance at privatisation.
- **As was always anticipated, as a result of these unique circumstances, UUW has consistently been unable to achieve the PR19 PCL:** It is therefore entirely inappropriate for Ofwat to set our 2024-25 baseline based on an assumption that we would meet the PR19 PCL. Indeed, we have already exceeded our FY25 PCL by August 2024 as a result of an exceptionally wet May, in which over 50 mm of rain fell widely over North West England over a 3 day period[2]. Based on projected incident levels for FY25, Ofwat's proposed PCL would require UUW to achieve a 60% reduction in incidents over the course of the AMP8, rather than the 13% Ofwat claims that this represents when using the PR19 PCL as the baseline. We consider that such a reduction fails to meet Ofwat's stretching but *achievable* test.

[1] https://assets.publishing.service.gov.uk/media/631227728fa8f542337bbd6b/storm-overflows-impact-assessment.pdf, page 50

[2] https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/weather/learn-about/uk-past-events/interesting/2024/2024_05_wet_weather.pdf

- **Whilst we welcome the introduction of an urban rainfall variable into Ofwat's base cost models, this does not sufficiently reflect the extra challenges we face in providing drainage services in the North West or justify application of a common PCL that does not reflect local circumstances:** We estimate that the inclusion of this variable results in a £80 million uplift to UUW's base allowances relative to a model suite with no such variable. An uplift of this magnitude will allow UUW to partially offset the increased costs of operating and maintaining existing assets in a region of high urban rainfall but will **not** facilitate the large-scale investment in rainwater management and combined sewer separation activities necessary to achieve a common PCL.
- **As a result, we maintain that our proposed PCL for UUW of 1.96 incidents per 10,000 sewer connections by FY30 is highly stretching:** Such a PCL represents the largest proposed percentage reduction in incidents in the industry over AMP8 (31.9%) and achieves a 55% reduction from UUW's AMP6 outturn position.
- **Critically, to prevent the outcomes package being significantly negatively skewed by exceptional weather events, Ofwat should re-instate a collar on this measure at a level equivalent to 0.5% of Ww RoRE:** Companies cannot reasonably be expected to 'weatherproof' the network against such events without very material additional investment that would likely have an unacceptable impact on customer bills. Over the last 10 years, the worst 1% of days accounted for 29% of UUW's total internal sewer flooding incidents, illustrating the disproportionate impact that low frequency, high magnitude events can have on this performance commitment.
- **We note inconsistency between the design of the internal sewer flooding performance commitment and other measures:** For example, Ofwat proposes a company-specific PCL for storm overflows for UUW but a common PCL for internal sewer flooding, despite overlap in the exogenous factors that influence performance. Additionally, Ofwat considers that company-specific PCLs are appropriate for external sewer flooding to avoid 'setting an unachievable level of stretch for some companies in the 2025-30 period'. It fails to justify why the same principles are not applicable to PCLs for internal sewer flooding.
- **Ofwat has excessively overpowered the ODI rate, which is not related to its own customer research valuations:** It values avoiding one internal sewer flooding incident at £60,720. Ofwat's DD ODI rate is 12 times more powerful / in excess of the customer valuation. The rate is also almost triple the already high rate that Ofwat set at PR19, which was already triple that of our PR19 business plan rate based on our own customer research at the time. Ofwat's approach also causes the ODI rate to be overstated by understating the range of performance likely to be experienced by companies.

2. UUW's PR24 proposal

In our October 2023 business plan document *UUW30 – Performance commitments technical document - PR24_ISF_Internal Sewer Flooding*, we presented compelling evidence to demonstrate why a common PCL is inappropriate and distorts incentives across the industry. Specifically, such a target fails to account for the significant environmental differences between company regions and how that impacts on attainable performance. As such, Ofwat's proposed approach does not lead to an equivalent level of stretch being applied to each company.

Ofwat's approach appears to recognise that the appropriate target for internal sewer flooding incidents should not be zero, given network and operational limitations that apply to all networks. Likewise, Ofwat's approach appears to recognise that the target needs to be calibrated to take account of the varying numbers of customers served by each company as this is an observed difference between companies that needs to be reflected in setting an appropriate target. However, this is not the only difference that exists between companies that needs to be taken into account in setting appropriate and efficient targets.

In our PR24 submission we demonstrated that urban rainfall, the proportion of combined sewers and the prevalence of food service establishments (FSEs) have a statistically significant impact on the number of internal sewer flooding incidents and that these exogenous variables are not equally distributed across operating regions, nor within short-term management control (October 2023 business plan document *UUW30 – Performance*

commitments technical document p.45-p.51). It would therefore be erroneous to conclude that an equivalent number of flooding incidents equates to companies having equivalent performance, irrespective of substantial variations in regional operating circumstances. UUW is particularly disadvantaged by such a simplifying assumption as the North West has: 40% more urban rainfall than the industry average; the highest proportion of combined sewers in the industry and an FSE density of 118.2 per 100,000 people relative to the industry average of 90.8 per 100,000 people.

To allow performance to be monitored on a consistent basis across the industry, we undertook a reproducible econometric modelling analysis to define PCLs that are normalised for regional environmental operating circumstances (October 2023 business plan document *UUW30 – Performance commitments technical document* p.51-53), namely urban rainfall, the proportion of combined sewers and FSE density. The urban rainfall and combined sewer variables were combined into a single 'interaction term' to reflect the interrelationship between these two variables. The hydraulic capacity of combined sewers is exceeded much faster than that in separate systems during rainfall events and therefore **engineering rationale dictates that these variables cannot be considered independently** – a high prevalence of combined sewer compounds the effect of urban rainfall on network performance (and vice versa).

We proposed that PCLs for all companies are set at the 'environmentally-adjusted upper quartile', i.e. an upper quartile that is adjusted by urban rainfall x the proportion of combined sewers and FSE density in a given region (October 2023 business plan document *UUW30 – Performance commitments technical document* Table 18). Whilst an entirely valid approach may have been to set our own AMP8 PCL at the environmentally-adjusted UQ, we wanted to stretch ourselves even further. We therefore instead proposed a PCL that represents a step change from the environmentally-adjusted UQ position at the start of the AMP to a position of **1.96 incidents per 10,000 sewer connections**, or 715 incidents. Such an outturn position is beyond the environmentally-adjusted frontier i.e. the minimum number of flooding incidents modelled to be achievable at frontier levels of performance, within the environmental operating circumstances of the North West, and delivers a highly stretching **31.9% reduction in internal sewer flooding incidents**. Such a PCL is also consistent with our PR19 submission which proposed a 55% reduction in internal sewer flooding incidents since AMP6.

We also raised substantive concerns with Ofwat's proposal to remove the underperformance collar for this measure (UUW30 p62-64). Without a collar, companies are exposed to an unacceptable level of financial risk for severe weather events that are largely outside of their control. For example, in September 2016, UUW experienced exceptionally severe weather in the Manchester and Stockport region over a two-day period, with localised return periods in excess of 1 in 1000. This two-day period alone resulted in 933 hydraulic and severe weather incidents; over 60% of the total number of incidents of this type reported in the whole year.

Whilst we recognised Ofwat's view that companies are best placed to, and therefore should be incentivised to, mitigate the impact of exogenous events on customers, weatherproofing the network to cope with storms with such exceptional return periods would likely be physically impossible. Further, attaining anywhere closer to this level of protection would require very material additional investment that would have an unacceptable impact on customer bills. We therefore proposed that the most appropriate solution would be for Ofwat to set a penalty collar for this measure at a level equivalent to ±0.5% return on Wastewater regulatory equity (RoRE). We considered that such a collar would only be exceeded during years of extreme rainfall and therefore would not discourage companies from driving performance improvements but solely protects against significant financial risk exposure from exogenous events. Indeed, whilst UUW, and all other companies, has had a collar on this measure in AMP7, we argued that this has not disincentivised us from delivering performance improvements.

Further evidence to support these proposals can be found in UUW30 sections 3.8 and 3.9.

3. UUW's understanding of the position in the draft determination

UUW understands that Ofwat has set a common PCL of 1.16 incidents per 10,000 sewer connections to be delivered by 2029-30, representing the median of those PCLs submitted by companies in their PR24 business

plans. Ofwat claims that such a PCL entails a 13% reduction in internal sewer flooding incidents over the course of AMP8 as it assumes the 2024-25 baseline position to be 1.34 incidents per 10,000 sewer connections, i.e. our PR19 PCL[3].

Ofwat has therefore rejected our proposals for environmentally-adjusted PCLs. It justifies this decision by stating that their base cost models include explanatory variables that cover key exogenous factors that vary between regions, including urban rainfall, and consequently its argues that adjusting PCLs for these factors would double count the impact they have[4].

We understand that Ofwat does not intend to apply any risk protection for this measure in the form of an underperformance collar. Ofwat states that companies should not expect to receive relief from the impacts of underperformance where exogenous events occur[5].

We observe that Ofwat has increased incentive rates from the indicative incentive rate of £15.1 million per 10,000 sewer connections provided in June 23 to £21.737 million per 10,000 sewer connections[6]. This represents an approximately three-fold increase relative to the AMP7 incentive rate.

Ofwat estimates that UUW's P10 for Internal Sewer Flooding is -0.19% of RoRE[7] based on the application of an industry average performance range to UUW's P10/P90 ISF. It is highly inappropriate to estimate UUW's P10 based on an industry average as, as a result of our unique operating circumstances, we have **never** been able to achieve an incident level that is concordant with the industry average. Indeed, our estimates indicate that under Ofwat's proposed incentive design, the P10 for this performance commitment is -1.4% Wastwater RoRE, presenting an unacceptable negative skew on the outcomes package.

4. Issues and implications arising from the draft determination

4.1 Ofwat's proposal to set a common PCL

We are disappointed to understand that Ofwat has failed to adopt UUW's well-evidenced proposal for environmentally-adjusted PCLs. In UUW30 PR24_ISF_Internal Sewer Flooding, we provided ample evidence to demonstrate that urban rainfall, proportion of combined sewers and FSE density are material drivers of internal flooding performance and that these factors are not distributed equally across company regions. As such, Ofwat's proposed approach does not lead to an equivalent level of stretch being applied to each company, with some companies being penalised for not being able to deliver unachievable targets, whilst others are rewarded for outperforming targets that are insufficiently stretching to attain within their regional operating circumstances. UUW is especially disadvantaged by this decision as we serve an operating region with 40% higher than average urban rainfall (Figure 1), the highest proportion of legacy combined sewers in the industry (Figure 2) and a higher FSE density (118.2 per 100,000 population) than the national average (90.8 per 100,000 population). We therefore maintain that a company-specific PCL is necessary for this measure.

[3] https://www.ofwat.gov.uk/wp-content/uploads/2024/07/PR24-draft-determinations-Delivering-outcomes-for-customers-and-the-environment.pdf, page 107

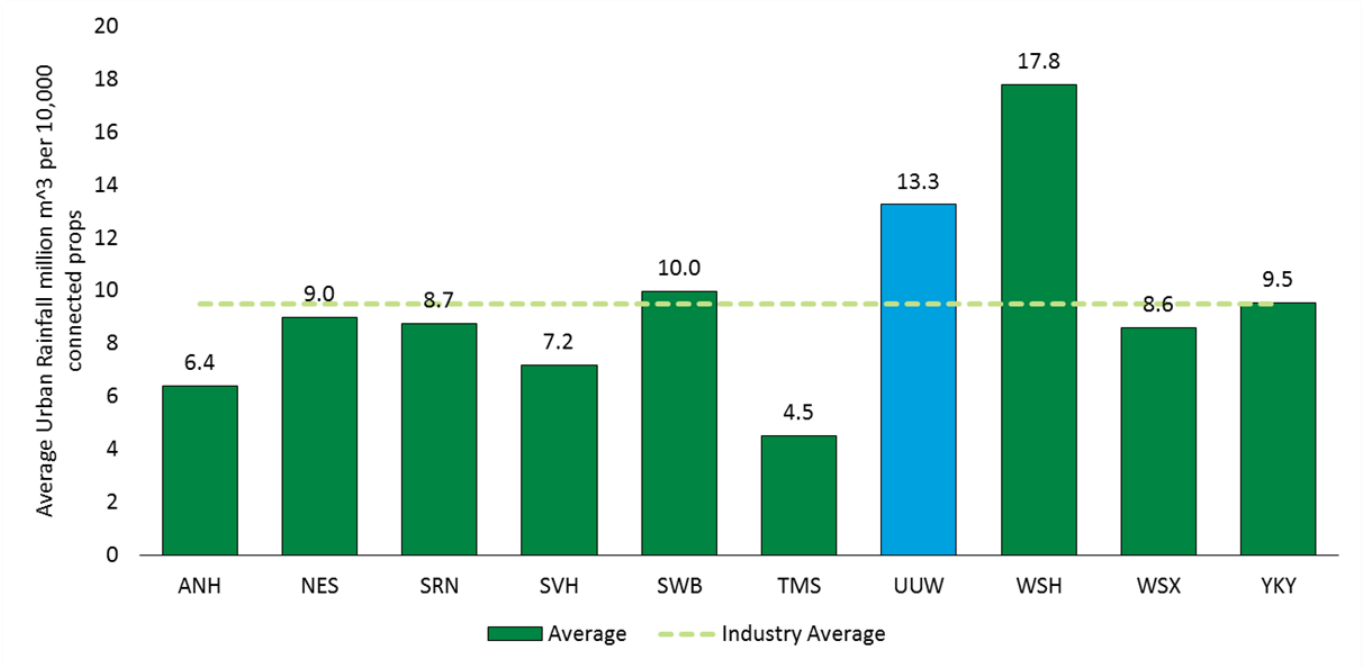
[4] https://www.ofwat.gov.uk/wp-content/uploads/2024/07/PR24-draft-determinations-Delivering-outcomes-for-customers-and-the-environment.pdf, page 107

[5] https://www.ofwat.gov.uk/wp-content/uploads/2024/07/PR24-draft-determinations-Delivering-outcomes-for-customers-and-the-environment.pdf, page 108

[6] https://www.ofwat.gov.uk/wp-content/uploads/2024/07/PR24-DD-ODI-Rates.xlsx

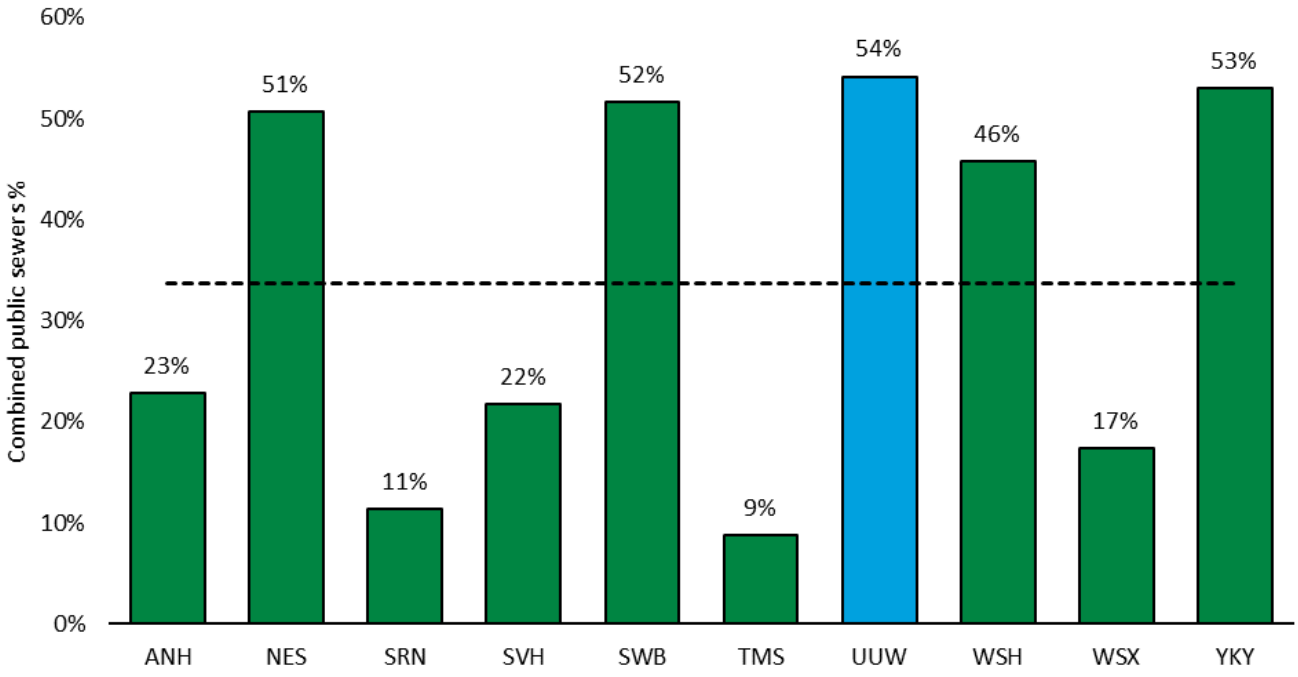
[7] Taken from cell M17 of Ofwat's DD document "PR24-DD-ODI-risk-5-Year-Additive-RoRE-Payments-model.xlsx" tab "% RoRE Wastewater Summary"

Figure 1: Urban rainfall (million m3) (wastewater – LAD) per 10,000 connected properties.



Source: Ofwat, urban rainfall calculations[8]

Figure 2: UUW has the highest % of public combined sewers in the industry



Source: Analysis of companies' APR submissions

It is critical to note from the outset that by seeking a company-specific target, UUW is **not** failing to recognise, and act upon, the devastating impact that internal sewer flooding can have upon customers' wellbeing. We know firsthand that sewer flooding is one of the worst service failures customers can experience and that even low severity events can cause significant stress and inconvenience for those who are impacted, especially when flooding occurs in homes.

Where sewer flooding does, unfortunately, occur we are committed to ensuring our response is swift and empathetic. We have undertaken a transformation of our operating model such that the average time to respond

[8] Ofwat (2022) *Urban rainfall calculations.* https://www.ofwat.gov.uk/publication/urban-rainfall-calculations/

to a customer experiencing internal sewer flooding has decreased from an average of 3.35 hours in September 22-March 23 to 1.63 hours in September 23-March 24, exceeding CCW's aspiration of 2 hours. We visit with a two-person team to diagnose and resolve the issue. This includes a clean-up on site, jetting the sewer and undertaking CCTV surveys to full inspect the sewers. If the flooding is a repeat event, an engineer is assigned to the customer to ensure we understand the root cause and review ways to mitigate any further impact. All repeat events are reviewed and executive level monthly meetings take place to drive resolution for customers.

We have an enhanced customer compensation scheme, we apply all compensation automatically and in addition to the GSS payment, we provide an additional £100 to every customer experiencing sewer flooding as a discretionary payment in recognition of the inconvenience. We also do not apply any exceptional weather clauses. In addition, new for AMP8, we have set aside a £1 million emergency fund for customers experiencing sewer flooding that may not have household insurance to ensure they receive the support they need.

We are proud to have strong customer satisfaction scores from customers who contact us with wastewater issues from both our internal surveys and the industry CMeX scores, with UU placing in first place in Q4 2023/24 and Q1 2024/25 2nd place. Our Ww complaints performance is also industry upper quartile.

Whilst we have taken every possible step to ensure that our handling of recovery from sewer flooding incidents is as supportive as possible of customers that have been impacted, we recognise, of course, that our primary aim must be that such incidents occur as rarely as possible. Measures undertaken to improve internal flooding performance and our response times to incidents include:

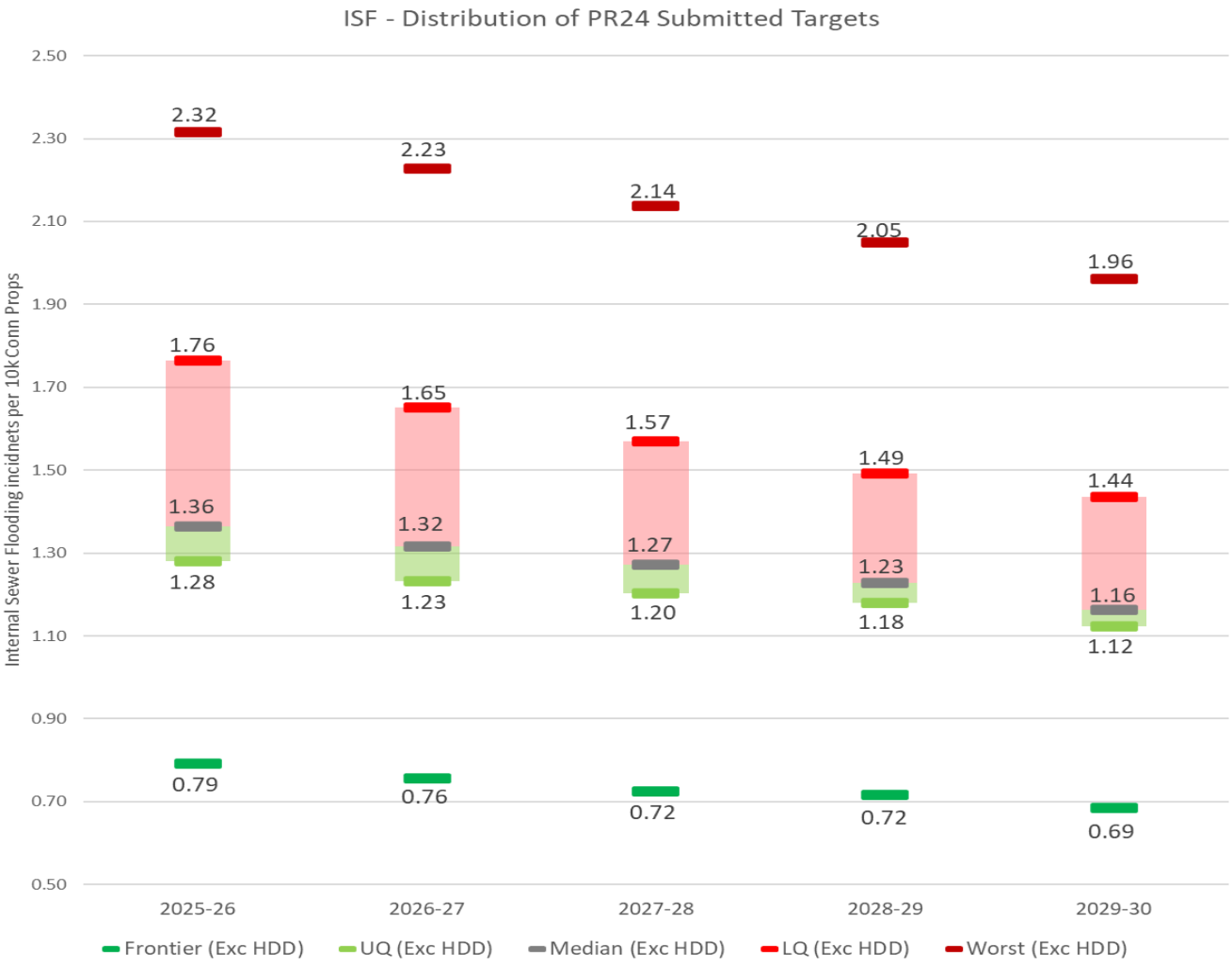
- Implementation of our dynamic network management (DNM) operating model. DNM has involved the installation of over 17,500 intelligent sensors, predominantly targeted in the areas of highest annualised FoC flooding risk, allowing us to proactively detect, and be alerted to blockage formation, such that our teams can intervene to clear the blockage before flooding occurs. Since its inception in August 21, DNM has allowed us to proactively detect over 5000 sewer blockages and thereby avert an estimated 2500 internal & external sewer flooding incidents. As a result, we attained our lowest ever blockage numbers of 17,986 in FY24, which maintains our frontier performance on a normalised basis;
- Implementation of a robust blockage reduction plan. This includes actions such as: mandating post blockage clearance CCTV surveying to better understand root cause and raise remedial works accordingly; a targeted planned cleaning programme in areas identified as susceptible to repeat blockages and proactive walkovers to inspect asset types prone to blockage formation. We also completed an upskilling of all of our blockage technicians to allow them to transition into the customer support technician role.
- Installation of over 2,700 flood mitigation devices, such as flood barriers and non-return valves since FY17 at properties where flooding has previously occurred, significantly reducing the incidence of repeat flooding. Additionally, we have invested over £35 million in our 'hydraulic flood risk resilience' schemes to reduce the impact of hydraulic incapacity through cut and pump solutions as well as planned installation of 9,945 m3 of storage by the end of AMP7;
- £20.5 million investment in AMP7 to date on network reinforcement, primarily focused on offsetting deterioration in sewer flooding risk due to new developments. We are forecast to spend an additional £16.5 million in AMP7, including the completion of a project at Hoyles Lane, Cottam, to upsize approximately 4km of existing 225 mm and 300 mm to 600 mm and 750 mm sewers;
- Expansion of our regional 'What not to Flush' and 'Stop the Block' customer campaigns, as well as conducting more targeted engagement with communities in hotspot areas, including the distribution of fat traps. We have also partnered with ECAS to conduct over 16,500 site visits to high-priority FSEs since October 2019, providing education and advice regarding grease removal equipment and kitchen best practice. This work has resulted in the installation of over 850 grease traps, preventing an estimated 2,530 tonnes of FOG from entering UUW's sewer network.

We therefore remain wholly committed to reducing the number of internal sewer flooding incidents within the North West and ensuring our response is swift, empathetic and thorough where incidents do, unfortunately, occur. We do, however, recognise that our operating circumstances present a constraint upon the level of

incidents that is attainable from operational interventions alone. Cognisant of the impacts of sewer flooding, we are proposing a very stretching target that achieves a 31.9% reduction in incidents over the course of the AMP **and** reflects our operating environment and the impact that this has on attainable incident numbers within current and historical allowances. By contrast, the Ofwat target implies a 60% reduction over the course of the AMP, and 70% reduction over two years based on 2023/24 performance.

Whilst Ofwat has chosen to set a PCL set at the median of all submitted PCLs, and it could therefore represent that this is less stretching than a common upper quartile target, the median almost entirely aligns with the upper quartile as a result of those companies with a favourable combination of exogenous factors submitting PCLs clustered around the upper quartile. This is shown in Figure 3. As such, the median fails to account for the PCLs submitted by those companies for which upper quartile performance is exceptionally challenging. Irrespective of the statistical method used, applying any method which sets PCLs at the same level for all companies is highly inappropriate within the context of regional variations in operating circumstances.

Figure 3: A box and whisker plot showing the distribution of companies' submitted PCLs. The median and UQ are closely aligned and setting the PCL at the median excludes consideration of the extremes submitted by companies for which UQ performance is exceptionally challenging.



Source: Analysis of companies' proposed AMP8 PCLs submitted within their PR24 business plan

Below we address the key points identified by Ofwat in its justification for rejecting company-specific PCLs and provide evidence regarding these.

4.1.1 Causes of internal sewer flooding

Firstly, and whilst not explicitly addressed in its outcomes documentation, Ofwat has elsewhere within its draft determination, including within its base cost modelling appendix (page 46)9, suggested that UUW's internal sewer flooding incidents are almost entirely caused by operational causes (FoC) and are therefore within management control. Further, in Ofwat's directors meeting with UUW on its draft determinations on 24 July 2024, Ofwat expressed uncertainty regarding the mechanism by which a higher proportion of combined sewers increases internal sewer flooding risk. We therefore seek to provide further clarity on the mechanisms by which internal sewer flooding occurs below:

FoC Flooding

- Sewer flooding due to Flooding Other Causes (FoC) refers to flooding caused by operational issues, such as collapses, blockages and equipment failure. Interventions to prevent FoC flooding include: customer awareness campaigns regarding what not to flush and pour; planned sewer cleaning and maintenance and installation of in-situ monitoring to detect blockage formation.

Hydraulic flooding

- Sewer flooding due to hydraulic inadequacy refers to the overloading of sewers such that the capacity of a sewer is insufficient to accommodate the volume of waste and surface water flowing through it. This most commonly occurs during periods of heavy rainfall. Combined sewers are especially susceptible to hydraulic overloading during severe rainfall as they convey both wastewater and surface water. As a result, the available hydraulic capacity is utilised much more quickly than that in separate systems during equivalent rainfall events and combined sewers are therefore more susceptible to surcharging and resultant flooding. Indeed, as reported in *UUW_CAC_002* page 16[10], analysis completed as part of our sewer flooding hackathon demonstrated that, per km of sewer, the likelihood of internal surcharge events and internal overland incidents is 26.5% and 52.1% higher, respectively, in our combined sewers relative to our foul only sewers.

- Whilst combined sewer overflows (CSOs) were designed to act as relief valves to reduce the risk of flooding from combined sewers during heavy rainfall by allowing the discharge of diluted sewage, these are not present throughout the sewer network. Indeed, across over 79,000 km of sewers, there are 2,267 overflows, with the result that large portions of the upstream network are not afforded the protection of a CSO. For this reason, the delivery of the WINEP storm overflows programme, designed to meet the spill frequency drivers in the SODRP, will have negligible sewer flooding benefit (c.7.5 internal sewer flooding incidents). The storage and rainwater management measures implemented are in the vicinity of a CSO and thus are not designed to tackle the upstream sewer flooding. Since the existence of storm overflows within the combined sewer network is to provide hydraulic relief and prevent flooding, it follows that areas prone to flooding are unlikely to have storm overflows in the local contributing sewer network. Whilst measures such as the installation of properly-level flood mitigation devices and localised network storage schemes can mitigate against hydraulic flooding, the only way to fully address the root cause is via large-scale separation of combined sewers and upsizing of our sewer network.

In its assessment of our cost adjustment claim, Ofwat states "Sewer blockages explain a large proportion of internal sewer flooding incidents, as corroborated by United Utilities PR14 business plan submission that said only 13-15 percent of sewer flooding incidents are caused by hydraulic overload"[11]. This data has been interpreted entirely out of context and relies on data submitted over 10 years ago in our PR14 business plan. At PR14, sewer flooding performance was measured using the Sewer Flooding Index, which only included those properties which flooded internally on a 1 in 20 year storm or less, with hydraulic flooding in severe weather events (> 1 in 20 year) being excluded from the measure. The 13-15% figure has therefore been derived from a total incident level which

[9] https://uusp/uu/PR24/_layouts/15/WopiFrame2.aspx?sourcedoc={0BE7FB26-4445-4F71-9BE7-F6CE7FB49D21}&file=PR24-draft-determinations-Expenditure-allowances-Base-cost-modelling-decision-appendix.docx&action=default, page 46

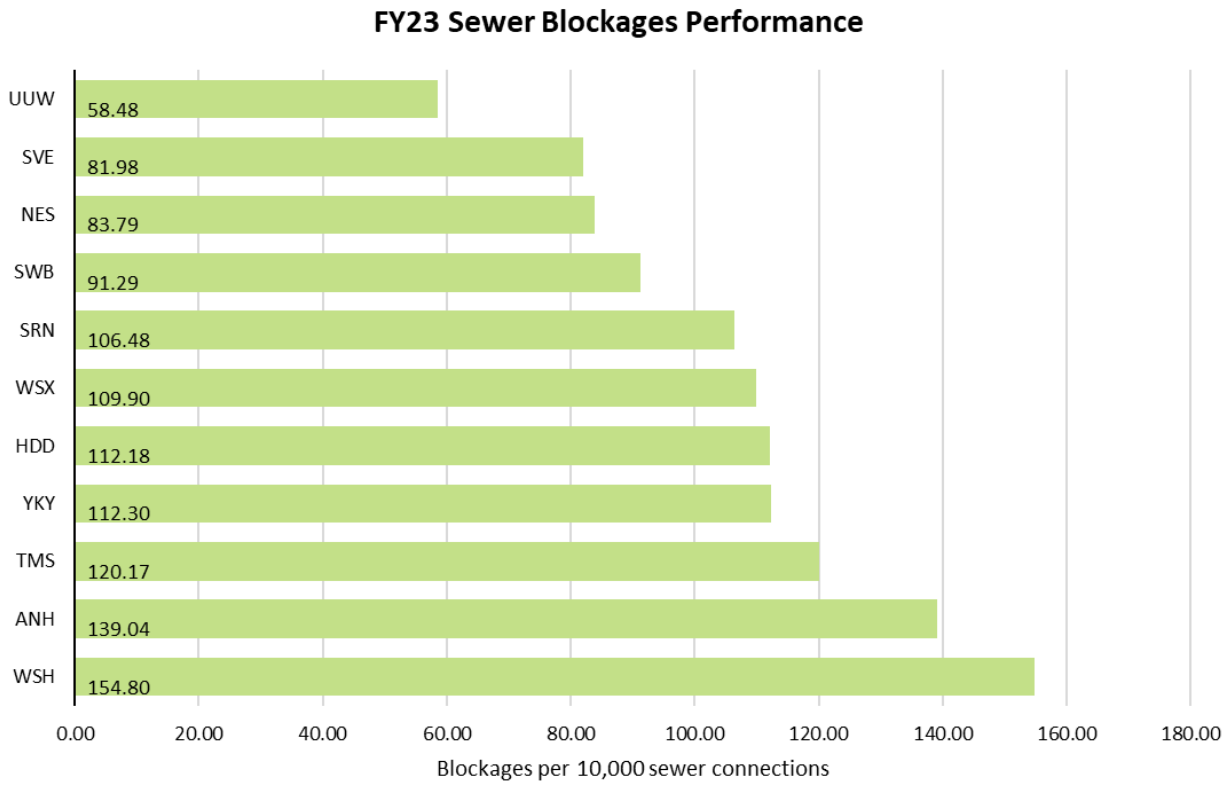
[10] https://www.ofwat.gov.uk/wp-content/uploads/2023/06/UUW_CAC_002-Drainage-Cost-Adjustment-Claim_Redacted.pdf, page 16

[11] https://www.ofwat.gov.uk/wp-content/uploads/2024/07/PR24-DD-NWT_Cost-adjustment-claims-1.xlsx

excluded the majority of UUW's hydraulic events. Further, since AMP5, UUW has reduced the incidence of internal FoC flooding by over 35% due to investment in our blockage resolution model, customer awareness campaigns and DNM. It is therefore incorrect for Ofwat to use an outdated statistic, which excludes incidents recorded during severe weather to imply that internal sewer flooding performance is almost entirely within management control. In actual fact, on average, between FY17-FY24, 28% of incidents have been caused by hydraulic overload and this masks inter-year variation whereby in some years hydraulic incidents have exceeded 50% of incident totals.

Additionally, in AMP7, several companies, including UUW, have a bespoke performance commitment to reduce the number of sewer blockages. UUW is the frontier company for sewer blockages performance as shown in Figure 4.

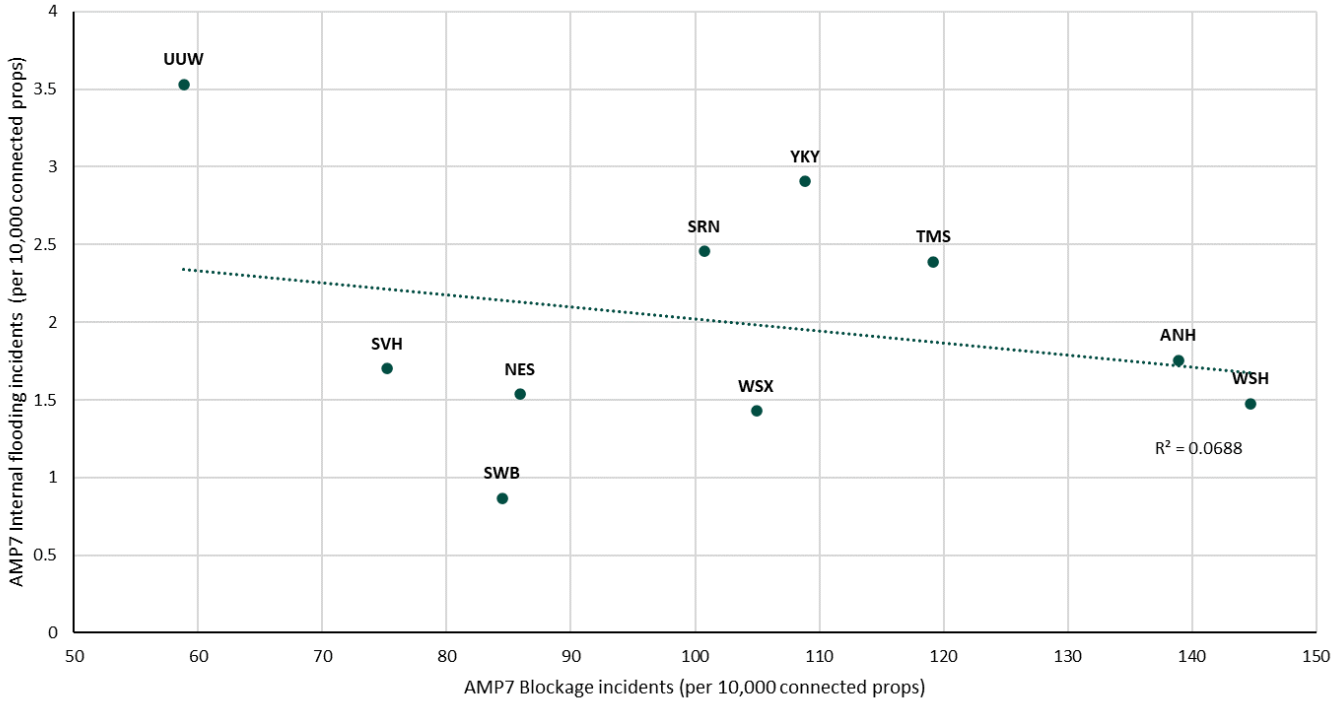
Figure 4: UUW is the industry leader for sewer blockage performance. It is therefore illogical for Ofwat to conclude that UUW's high level of internal sewer flooding incidents results from poor blockage performance.



Source: FY23 APR data

If UUW's higher level of internal sewer flooding incidents was driven by poor blockage performance, it is inconceivable to expect UUW to be the industry-leader for blockage performance. Indeed, Figure 5 demonstrates that there is a very poor correlation between companies' sewer blockage performance and level of internal sewer flooding incidents. This lack of correlation is indicative that other variables are the dominant determinants of the number of internal sewer flooding incidents in a region.

Figure 5: A scatter graph showing the absence of a correlation between company performance on sewer blockages and internal sewer flooding incident levels (FY21-FY24).



Source: Analysis of companies' APR data

As outlined above, UUW has invested significantly in activities to reduce the incidence of FoC flooding, including: the deployment of over 17,500 in-sewer monitors to proactively detect the formation of sewer blockages and raise alerts; over 16,500 visits to food service establishments to provides education on appropriate fat oil and grease (FOG) disposal practices and a rolling serviceability programme to regularly clean over 750 km of sewers on an annual basis. Despite this investment, and our resultant frontier sewer blockage performance, UUW has consistently been unable to achieve Ofwat's AMP7 PCL for internal sewer flooding. This is because the common PCL cannot be attained via operational interventions alone, and instead requires a fundamental re-configuration of our sewer network.

4.1.2 Inclusion of an urban rainfall variable in Ofwat's base cost models

Ofwat's view is that it has addressed the inequitable distribution of exogenous factors by including an urban rainfall variable in its base cost models, with the result that some companies receive higher expenditure allowances that reflect the extra challenges they face[12]. It therefore considers that adjusting PCLs for the same regional factors that are accounted for by their base cost models would double count the impact they have. Whilst we welcome the introduction of an urban rainfall variable into Ofwat's base cost models as a step in the right direction, **we do not consider that this decision acts to create a level playing field** for internal sewer flooding performance, and we do not consider that it provides an adequate allowance to provide customers with a common level of service compared to other companies in the industry.

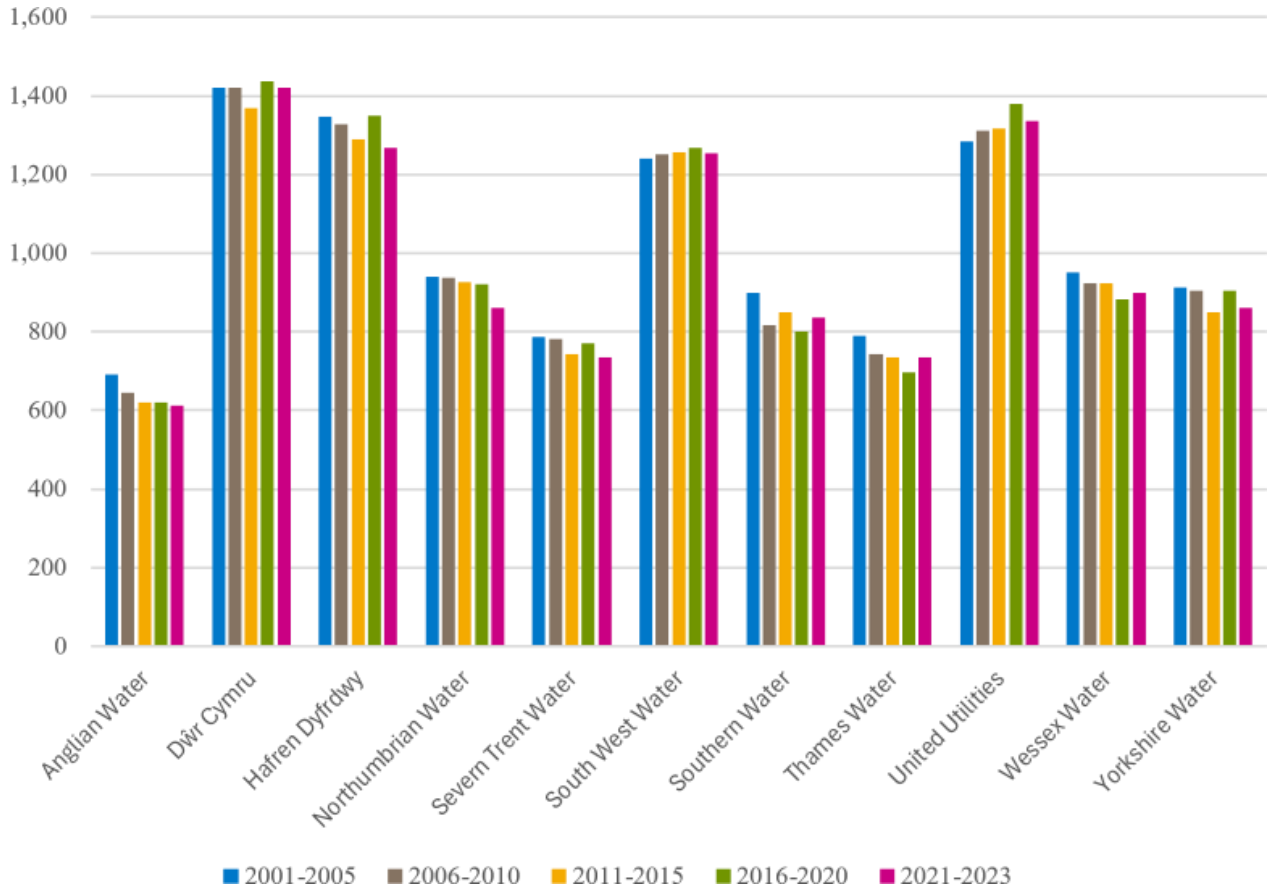
We estimate the modelled uplift to UUW's base allowances as a result of the addition of an urban rainfall variable to be c.£80 million, relative to a model suite without this variable. An uplift of this magnitude will allow UUW to partially offset the increased costs of operating in a region of high urban rainfall by partially representing the costs associated with operating and maintaining larger wastewater assets. The updated cost models therefore only reflect the additional costs associated with achieving existing incident levels. **They do not facilitate the billions of pounds of investment required in rainwater management and combined sewer separation activities necessary to achieve Ofwat's proposed PCL.** Companies have not been funded for such a level of investment historically or within AMP8, and therefore the costs of completing these activities will not be present in the base

[12] PR24-draft-determinations-Delivering-outcomes-for-customers-and-the-environment.pdf (ofwat.gov.uk), page 107

models. The inclusion of an urban rainfall variable within Ofwat's base cost models therefore cannot be considered to create a level playing field for internal sewer flooding performance and as such should not be used as justification for setting a common PCL for this performance commitment.

Additionally, the introduction of this variable in AMP8 does not negate the cumulative disadvantage that UUW has been placed under for successive AMPs in which this variable has not been included within Ofwat's base cost models. Whilst Ofwat has recognised the strong engineering rationale for the inclusion of an urban rainfall variable within its cost models, it has not sought to adjust historical botex allowances to reflect the sustained impact of the inequitable distribution of urban rainfall. This is despite Ofwat's own analysis showing that this inter-company variability in rainfall has remained consistent since at least the beginning of Ofwat's dataset in 2001 (Figure 6).

Figure 6: Average yearly MSOA rainfall over time (2001-2023) as per Ofwat's analysis.



Source: Ofwat PR24-draft-determinations-Expenditure allowances-Base-cost-modelling-decision-appendix, p44

Further, Ofwat does not include a variable to reflect the impact of combined sewers on costs (and attainable incident levels). We do not consider that these variables can be considered independently as the hydraulic capacity of combined sewers is exceeded much faster than that in separate systems during rainfall events. Therefore, engineering rationale dictates that these variables must be considered together– a high prevalence of combined sewers compounds the effect of urban rainfall on internal sewer flooding incident levels (and vice versa). Urban rainfall falling in a heavily separate system will have less of an impact on the number of sewer flooding incidents observed than in a region in which the network is highly combined.

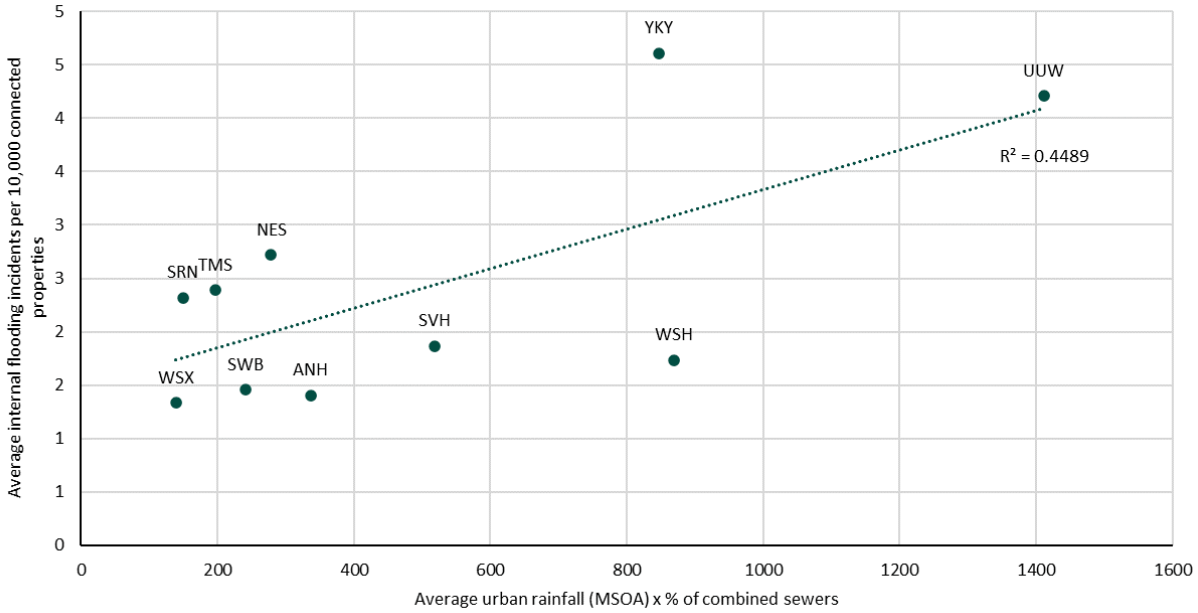
In its base cost modelling documentation[13], Ofwat states:

"It is not clear that having a high percentage combined sewers makes it more challenging to deliver good internal sewer flooding performance. For example, Dŵr Cymru has relatively high percentage of combined sewers and urban rainfall but performs well on internal sewer flooding".

[13] PR24-draft-determinations-Expenditure-allowances-Base-cost-modelling-decision-appendix.pdf (ofwat.gov.uk)

Whilst it is true that Welsh Water has delivered good performance despite its operating circumstances, Figure 7 shows how UUW is a significant outlier, having a much larger urban rainfall x combined sewer variable (i.e. our 'interaction term') than other companies. Indeed, the interaction term for UUW is more than double that of Welsh Water and therefore we cannot be compared on the same basis.

Figure 7: A scatter graph showing the correlation between the urban rainfall x combined sewers interaction term and the number of internal sewer flooding incidents for each WaSC (FY17-FY23)

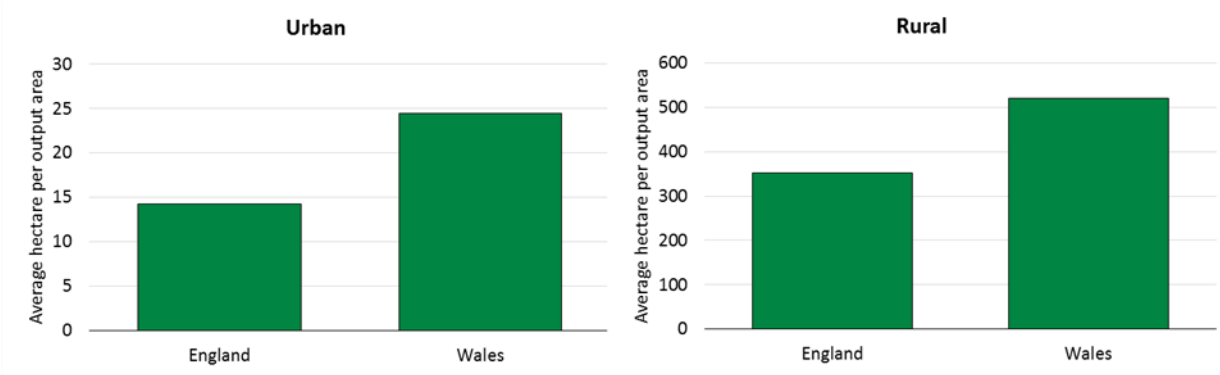


Source: Analysis of Ofwat's urban rainfall variable and companies' submitted APR data for the period FY17-23

Further, in Appendix B of our drainage cost adjustment claim, *UUW_CAC_002*, we raised concerns regarding the way that the ONS' classification of urban areas systematically overstates the size of urban areas in Wales. As we demonstrated in our cost adjustment claim, MSOAs classified as 'urban' often contain large swathes of rural land that are unlikely to drain to a sewer network. Arguably, this would not be an issue if urban areas were equally overstated across all areas of England and Wales. However, as the size of geographic land parcels is, on average, bigger in Wales (Figure 8), the urban rainfall term in Wales will be systematically overstated. Indeed, Ofwat's updated urban rainfall variable appears to make the difference between Welsh Water and the industry average even more pronounced. Whilst Ofwat considers that that updated urban MSOA rainfall variable *'truly measures how much rainfall falls in urban areas across England and Wales'*[14], it is still subject to the shortcomings associated with the classification of urban MSOAs outlined in our Appendix B of *UUW_CAC_002* and as such, over a disproportionate area in Wales, rainfall recorded in 'urban' MSOAs will be falling over largely unsewered areas.

[14] https://www.ofwat.gov.uk/wp-content/uploads/2024/07/PR24-draft-determinations-Expenditure-allowances-Base-cost-modelling-decision-appendix.pdf, page 43

Figure 8: Both urban and rural areas in Wales tend to be larger.



Source: Replicated from UUW_CAC_002

Whilst we do not consider this undermines the strong economic and engineering rationale for adoption of the urban rainfall variable, and reflects the best data available within the time constraints imposed by the consultation period, caution should be applied when drawing direct comparisons with Welsh Water. It is also for this reason that we have not sought to update our urban rainfall statistics to reflect the revised variable (which would imply that UUW experiences c.20% more urban rainfall than the industry average) as we consider that the industry average has been unduly inflated by the systematic overstatement of urban rainfall within Wales.

In summary, whilst we welcome Ofwat's proposal to include an urban rainfall variable within the base cost models, we do not consider that this negates the requirement to adjust PCLs to account for the impact of exogenous variables on attainable performance. The uplift in the base allowances partially reflects the additional costs of operating and maintaining a drainage system in an area in which increased volumes of surface water enter the sewer network. However, to create a level playing field under which a common PCL could be acceptable, billions of pounds of additional enhancement expenditure would be necessary.

4.1.3 Combined sewers and exogeneity

We note that elsewhere in the submission, including in its base cost modelling decision appendix, Ofwat considers the proportion of combined sewers in a region to be an endogenous variable. While companies may exert a degree of control over the proportion of combined sewers, such control materialises only in the very long term, thus not posing a significant risk of endogeneity. As discussed in our Future Ideas Lab paper on "The Principles of Regulatory Cost Assessment"[15], it is appropriate to include variables that management can change little on a year-to-year basis. We believe that the combined sewers variable meets this criterion.

UUW has the highest proportion of legacy combined sewers in the industry, at 54% relative to an industry average of 33%. This is a legacy asset base that companies inherited at privatisation. Indeed, over 76% of our sewer network was built before 1980. We could not control the asset base we inherited and whilst we are looking to increase surface water separation, this is an expensive and complex process to conduct at scale. Therefore, whilst Ofwat has argued that inclusion of a combined sewer variable in the base cost models – and presumably, by extension, performance models - may reduce the incentive to separate sewers, we reject the premise that achieving full separation of combined sewers is a feasible or a desirable goal, at least in the short-term. This is because combined sewer separation is both very costly and disruptive for customers and communities.

Whilst Ofwat has not provided detailed information regarding the reasons for their rejection of our proposals for our environmentally-adjusted PCLs, we infer that the reasons are comparable to those outlined in 'base cost adjustment feeder model- United Utilities'[16] which explains the rationale for rejection of our drainage cost adjustment claim. We therefore provide additional evidence opposite each of those points that are applicable to performance modelling below:

[15] United Utilities, July 2021. Future Ideas Lab: The Principles of Regulatory Cost, p. 14.

[16] https://www.ofwat.gov.uk/wp-content/uploads/2024/07/PR24-DD-NWT_Cost-adjustment-claims-1.xlsx

'United Utilities does not provide compelling evidence that it faces unique circumstances'
Ofwat states that:

"In 2022-23, 53.7% of United Utilities' sewer network comprised of combined sewers. This is the largest of all wastewater companies, but is broadly comparable to Yorkshire Water, Northumbrian Water, South West Water and Dŵr Cymru".

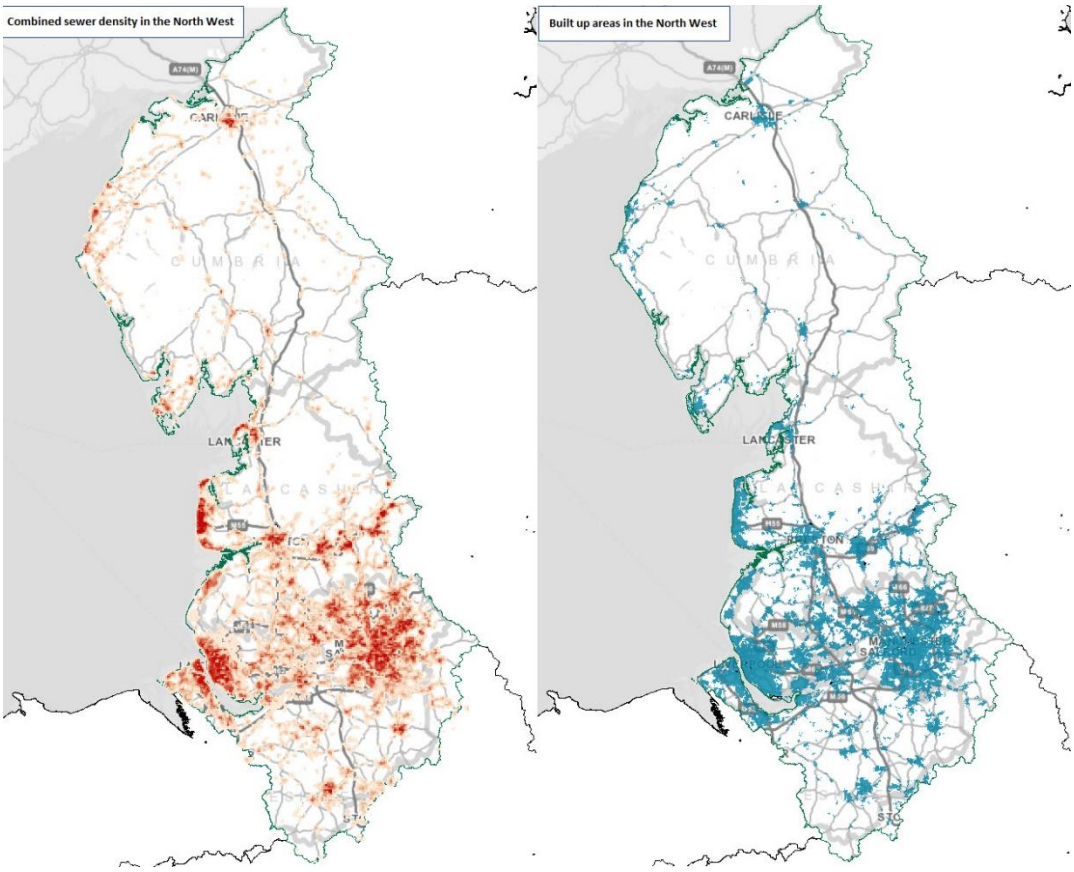
Whilst this may be true, we consider that this is a misrepresentation of UUW's argument. It is not the proportion of combined sewers in a region alone that is driving internal sewer flooding incident levels, but rather its interaction with urban rainfall. Thus, whilst companies like Northumbrian Water and South West Water may have a highly combined sewer asset base, they experience much lower urban rainfall– Northumbrian Water due to its position on the east of the country with lower exposure to incoming Atlantic depressions and South West Water due to its propensity of rural land usage. Combined systems reach their capacity less frequently in regions with lower urban rainfall. The impact of the interaction between urban rainfall and combined sewers on internal sewer flooding incident numbers can be seen graphically in Figure 7. It is clear from this graph that it would be erroneous for Ofwat to conclude that UUW does not have unique operating circumstances.

'Percentage of combined sewers is a blunt instrument and does not consider the complexity of network configuration. Arguably, the focus should be on combined sewers in urban areas. And even then, a company may have lots of separated sewers that fall into a combined sewer on its way to a wastewater treatment works'.
Whilst we recognise the impact that local network configuration has on the number of sewer flooding incidents in an area, it is not possible to represent every factor in performance modelling. For example, although we identified that Manchester's topography as a 'bowl' tends to hold water and re-direct it towards our sewer network increasing system surcharging and flood risk (see UUW30 page 49), we did not seek to account for this in our proposed performance model as we recognise it would be difficult to represent. Instead, it is important to limit models to those factors that have a statistically significant impact on performance at the macro scale. Indeed, this is the entire premise of Ofwat's base cost models in which explanatory variables such as weighted average population density and sewage treatment works per property are used to allocate costs. In our performance modelling for internal sewer flooding (see UUW28), we were able to demonstrate that the urban rainfall and combined sewers, as represented by a single interaction term, have a statistically significant impact on internal sewer flooding incident numbers and therefore are suitable explanatory variables.

Further, we do not consider that it is necessary to adjust the combined sewer variable to reflect only combined sewers in urban areas. Implicitly, a combined sewer variable can be taken to be indicative of combined sewers in urban areas. This is because combined sewer systems were first designed by the Victorians and were used to help accommodate the rapidly growing populations in major urban centres from the 19th up to mid 20th century.[17] Thus, we should expect combined sewer prevalence to be greatest in those regions that experienced high population growth during this period and represent some of the major urban conurbations today: areas surrounding Manchester, Liverpool, Sheffield, Leeds, Newcastle, as well as South Wales. Indeed, as shown in Figure 9 the areas of highest combined sewer density in the North West almost entirely coincide with those most built up areas.

[17] Defra, September 2023. Storm *Overflows Discharge Reduction Plan*, p. 8.

Figure 9: A map of combined sewer density in the North West against a map of built up areas from the ONS[18].



Source: ONS Built Up Areas (December 2022) Boundaries GB BGG

"Sewer blockages explain a large proportion of internal sewer flooding incidents, as corroborated by United Utilities PR14 business plan submission that said only 13-15 percent of sewer flooding incidents are caused by hydraulic overload. One could argue that combined sewers reduce rather than increase the risk of sewer blockages due to rainfall clearing any blockages".

As outlined in section 4.1.1, this data has been interpreted entirely out of context and relies on data submitted over 10 years ago in our PR14 business plan. At PR14, severe weather incidents, i.e. where the return period of the rainfall event > 1 in 20, were excluded from the measurement of internal sewer flooding performance. The percentage of flooding events that were due to FoC flooding was therefore calculated from a total in which the majority of UUW's hydraulic incidents had been removed. Further, since AMP5, UUW has invested significantly in our blockage resolution model, DNM and customer awareness campaigns to become the frontier company for blockage performance and we have reduced internal FoC flooding by over 35%. In actual fact, on average, between FY17-FY24, 28% of incidents have been caused by hydraulic overload and this masks inter-year variation whereby in some years hydraulic incidents have exceeded 50% of incident totals.

With regards to Ofwat's assertion that 'one could argue that combined sewers reduce rather than increase the risk of sewer blockages due to rainfall clearing any blockages' we consider that this statement is poorly supported by empirical evidence – if it were true, one would expect companies in low rainfall areas to experience higher frequency of sewer flooding incidents, which is clearly not the case. Also, crucially, such an effect cannot be considered to outweigh the clear disadvantage that a high proportion of combined sewers has upon attainable performance for internal sewer flooding. This can be observed at the company-level, as shown in Figure 7, which demonstrates the correlation between the interaction term and internal sewer flooding numbers, as well as analysis of the distribution of internal sewer flooding incidents amongst UUW's own asset base. The result of our sewer flooding hackathon demonstrated that, per km of sewer, the likelihood of internal surcharge events and internal overland incidents increase by 26.5% and 52.1%, respectively, in combined sewers relative to foul sewers.

[18] Built Up Areas (December 2022) Boundaries GB BGG | Built Up Areas (December 2022) Boundaries GB BGG | Open Geography Portal (statistics.gov.uk)

If the improvement in blockage clearance in combined sewers outweighed the effect of the clear disadvantage of such systems in terms of lower available capacity during periods of rainfall, this would manifest in a higher incidence of sewer flooding in foul only sewers – an effect that is not observed.

Ofwat made similar claims at PR19[1], in which it claimed that *"when flows are not sufficiently high to cause spills from CSOs, sewers in a wetter region will convey higher volumes of wastewater than the same sized sewers in a drier region, simply because there are fewer dry days. In consequence, the sewers will run fuller more of the time."* This implicitly recognises that UUW has lower spare operating capacity in its sewer network more of the time, and hence is a greater risk, for more of the year, of a rainfall event causing hydraulic overload and hence a greater risk of sewer flooding.

In the same document, Ofwat goes on to state that *"although United Utilities has the second highest volume of surface water entering its sewers this must be balanced by a higher than average proportion being lost from the system via overflows. This in turn may be expected to have a greater moderating impact on the size of the combined sewers in its network*." This statement appears to reflect an assumption that downstream release from overflows can serve to alleviate the upstream risk of sewer flooding, which will very often not be the case, especially during periods of high rainfall. Furthermore, since the SODRP targets will move companies towards normalised spill frequencies, it can no longer be the case that relatively higher levels of overflow spills are alleviating sewer flooding risk.

UUW also commissioned WRc to complete a study on the relationship between rainfall and blockages. The results did not support the simple assumption that rainfall events always lead to higher rates of blockage clearance and, conversely, demonstrated that storm events can actually increase blockage frequency. For example, analysis of a blockage peak during Storm Christoph concluded that:

"Analysis of the impact of Storm Christoph at a regional and drainage area level confirmed the significance of this rainfall event with the highest number of blockages over a 3-day period experienced across the region in the 5-year period 2017-2021. Antecedent rainfall events in the week leading up to the storm contributed a secondary blockage peak. Inspection of the blockage response to Storm Christoph rainfall suggests a 3-day total rainfall threshold of at least 40 mm in a given drainage area is important to drive higher number of blockages, for all slope classes"[19]

"Combined sewers is endogenous and including it in the base cost models may reduce the incentive to separate sewers and / or influence network configuration".

We strongly refute the idea that the proportion of combined sewers in an operating region is an endogenous variable as companies have not been funded to undertake large-scale separation of their systems. In order to attain the industry average proportion of public combined sewers (33%) to enable UUW to complete on an equal playing field (for the combined sewer variable), we would have to separate nearly 9,000km of combined sewers. It is estimated that this would cost c. £13.4 billion[20],excluding the additional costs associated with site specific conditions such as ground condition, property-level disconnections and major traffic management. UUW has not been funded for this level of activity historically, or within AMP8. We estimate that our AMP8 implicit enhancement allowance for 'reducing sewer flooding risk for properties' from Ofwat's proposed base models is c.£120 million; **111 times less** than what is required to enable UUW to compete on a level playing field for the combined sewer variable alone.

Ofwat's characterisation of the incentives facing companies relating to combined sewer separation suggests that companies separate their systems as part of their day-to-day operations. This is not the case. The configuration of sewerage assets is predominantly determined by decisions and circumstances from before privatisation. Figure 10 shows that across the industry total combined sewer length has remained broadly unchanged in the last decade, meaning that the costs associated with combined sewer separation are not present in the botex panel data set.

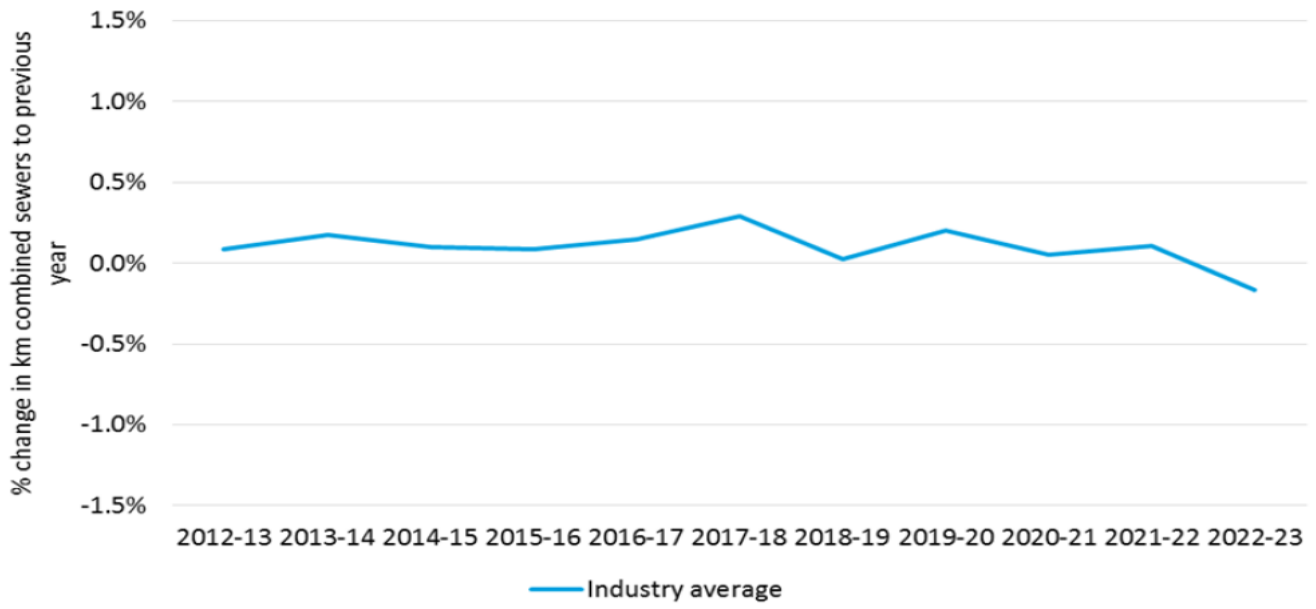
[1] : PR19-final-determinations-United-Utilities-Cost-efficiency-additional-information-appendix.pdf (ofwat.gov.uk)

19 WRc (2023) Understanding the Impact of Rainfall and Drainage Area Features on Blockages. Available upon request.

20 Cost estimates based on unit rates for laying 8800 km of new sewers, with diameter bands being apportioned in accordance with the % of our existing combined sewer stock within each band.

Any small fluctuations that have been observed can largely be attributed to improved mapping of the transferred asset base and/or adoption of new sewerage systems from developers.

Figure 10: Rate of change in combined sewer length (industry average)



Source: UUW analysis of Industry data share

In addition, large-scale separation of combined sewers would cause unprecedented disruption to towns and cities across the North West. Indeed, the significant challenges associated with separation of combined sewers are explicitly acknowledged in the Government's Storm Overflows Discharge Reduction Plan[21]. At a local level, this was recently demonstrated by UUW's pilot study in Church Lawton, which examined separation options. Our customer research found that many residents are wary of the disruption that large-scale conventional surface water separation would bring, particularly when work on private property needs to be carried out. Additionally, further investigations revealed that it would cost from £1.79 m up to £2.08 m to fully disconnect 23 properties, with costs rising when lower customer take-up is assumed. Given these high totex estimates, as well as customer aversion to disruption, the pilot study concluded that such an approach to surface water separation would not be viable from an operational and financial perspective. We therefore do not consider that submitting £13.4 billion enhancement case, to enable UUW to deliver service on a comparable basis ("level playing field") for the combined sewer variable, is likely to be in the best interests of customers as a whole.

We therefore present compelling evidence to demonstrate that the proportion of combined sewers in an area should be treated as an exogenous variable. WaSCs did not start out on a level playing field for this measure post-privatisation, nor have cost allowances allowed companies to make any meaningful steps to undertake large-scale separation of their combined sewer network. Customers cannot be reasonably expected to fund the large-scale separation of our combined sewer network, and UUW has not been funded to do so. This all demonstrates that this variable cannot be considered to be within management control.

That is not to say we do not see the value of surface separation, where this delivers best value and is implemented in conjunction with other rainwater management measures such as swales, permeable paving and wetlands. Indeed, it is a critical tenet of our future rainwater management strategy. However, we recognise that this must be implemented a part of a sustainable programme of blue-green activities staggered over multiple AMPs to limit impact to customer bills. We were therefore disappointed to understand that Ofwat rejected our £132 million enhancement case to initiate this multi-AMP programme.

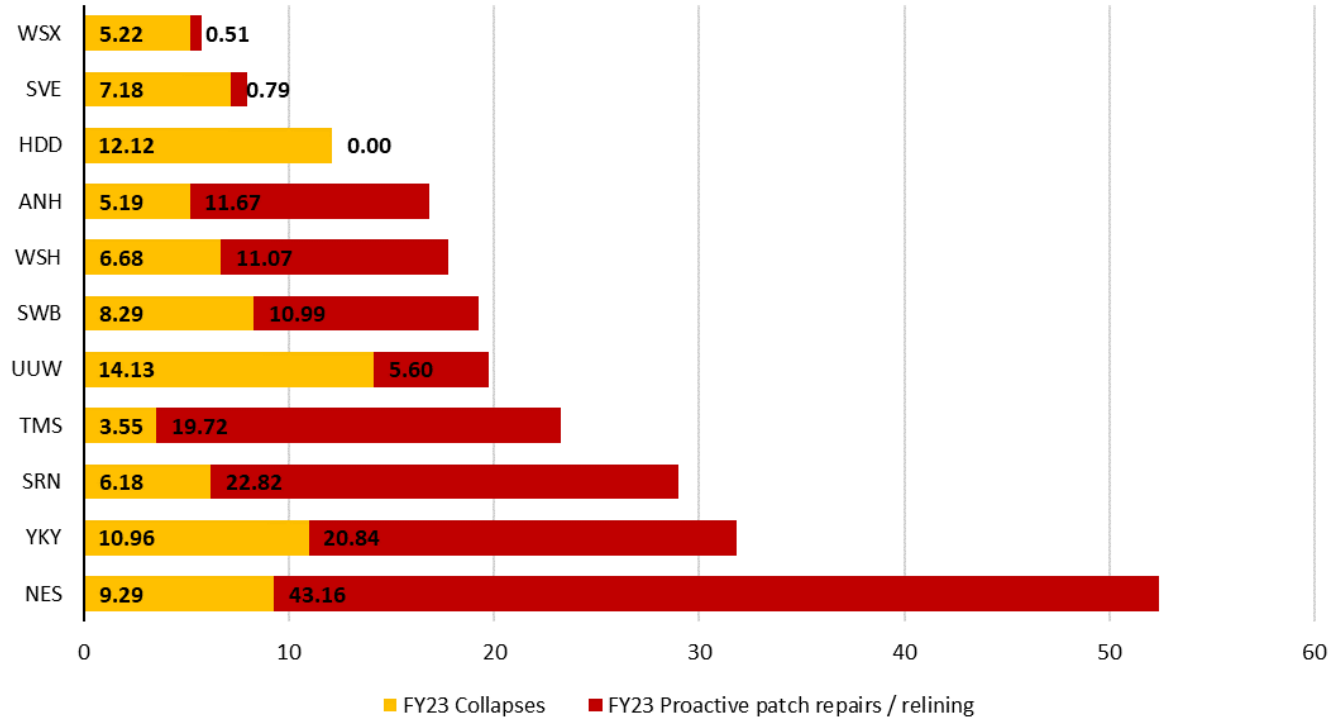
[21] Consultation on the government's storm overflows discharge reduction plan (defra.gov.uk)

'Risk that percentage combined sewers is capturing other factors, such as asset health'
Ofwat raises this concern on its assessment that 'United Utilities and Yorkshire Water both suggested including percentage of combined sewers in the wastewater network plus base cost models, and both companies have relatively poor sewer asset health based on the percentage of legacy sewers classified as condition grade 4 (poor) or 5 (very poor)'. Whilst we cannot comment on behalf of Yorkshire Water, UUW has repeatedly raised substantive concerns with the way that asset condition grades are being classified amongst companies. Specifically, Ofwat's methodology asks companies to band sewers into cohorts based on the **reportable** collapse rates documented in those sewers. Due to material differences in the way in which companies classify reportable collapses, we do not consider these condition grades to be comparable between companies. Indeed, in our commentary for CWW21 in our PR24 submission we noted:

"The clarification of collapse reporting for AMP7 achieved through the cross industry working group prior to AMP7 has led to significant changes in collapse reporting. Since the collapse rate/condition boundaries may have been derived from data prior to the guidance clarification it is likely that the condition boundaries are not reflective of network condition"[22].

Specifically, in AMP6, different companies adopted different assumptions regarding the degree of deformation that constitutes a collapse, therefore providing a poor cross-sector comparison. Further, whilst the AMP7 methodology has undergone a degree of standardisation, we consider that there are consistencies in the way that companies define excludable 'proactive collapses' which accounts for the large inter-company variability in collapse performance. Specifically, at UUW, to fully establish the root cause of an incident and prevent repeat incidents, we systematically complete CCTV surveys post-incident *even where flows have been restored without the immediate need for repair or replacement.* We would classify collapses identified within this way as reactive collapses and therefore include them within our reported figures. We believe that other companies exclude collapses identified within this way (Figure 11), and, further, not all companies complete post-incident CCTV imagery as standard so would not detect such collapses.

Figure 11: 2022/23 APR Data displaying the ratio of reportable collapses (2022/23 collapses) to excludable to proactive collapses (2022/23 proactive patch repairs/relining). UUW classifies less collapses as proactive collapses than most other companies.



Source: 2022/23 APR Data

[22] uuw84r.pdf (unitedutilities.com), page 64

We therefore consider that Ofwat's assertion UUW has relatively poor asset health, and by extension the conclusion that a combined sewers variable would implicitly capture this, is unsupported by evidence. Rather, our higher recorded normalised collapse rates are an outcome of our comprehensive operating model whereby we systematically CCTV our sewers following incidents. Whilst inflating our reported collapse numbers relative to other WaSCs, we nevertheless consider this approach drives the best outcome for customers by allowing us to more effectively determine root cause, avoid repeat incidents and inconvenience for customers, and schedule repairs accordingly. We consider that significant improvements to collapse reporting are required, enabling other companies to make similar improvements to their asset health strategy without fear of reporting a supposedly higher number of collapses.

"Data limitations and quality concerns - due to data limitations, it is necessary to make an assumption on the percentage of transferred private sewers that are combined. The modelled outcome is somewhat sensitive to the assumption that is applied - all combined sewers; all separated sewers; or the same proportion of combined and separated sewers as legacy sewers"

For UUW, the overall proportion of combined sewers changes little when transferred sewers are considered alongside public (legacy) sewers. The overall proportion of public combined sewers in the North West is 53.6%, compared to 50.0% when transferred sewers are included within the total. Further, as it is the variation between companies that is critical rather than the absolute value, we consider that the proportion of public combined sewers is an appropriate proxy given that this data is comparable between companies.

Ofwat also states that it is concerned about the quality of company data. We note that the same concerns are applicable to the total length of transferred sewers, as companies must make assumptions regarding the inferred length of private sewers. Nevertheless, Ofwat still uses total sewer length, inclusive of this transferred sewer length, to normalise key performance commitments, such as sewer collapses and total pollution, and within its sewage collection models as a measure of company scale. It does so on the basis that any limitations are outweighed by the benefits of normalising for an exogenous variable – in this case scale – and we consider that the same rationale applies to the proportion of combined sewers.

4.1.4 An ambitious company-specific target

UUW maintains that our submitted PCL, of 1.96 incidents per 10,000 sewer connections by 2029-30, is a highly stretching target that will see us attain a 31.9% reduction in internal sewer flooding incidents; the largest proposed reduction in incidents across the industry (Table 1). Such a PCL is substantially beyond anything that UUW has been able to deliver historically. It is also in keeping with the 2029-30 position we submitted in our PR19 business plan, delivering a 55% reduction in internal sewer flooding incidents compared to AMP6. We were therefore highly disappointed to understand that Ofwat deemed our proposals for internal sewer flooding to be 'particularly unambitious' in its ambition assessment and we consider that Ofwat has failed to contextualise our proposals within the unique operating circumstances in the North West.

Table 1: Companies' forecast FY25 for internal sewer flooding and their proposed PCLs. UUW proposed the largest % reduction in internal sewer flooding incidents in the industry.

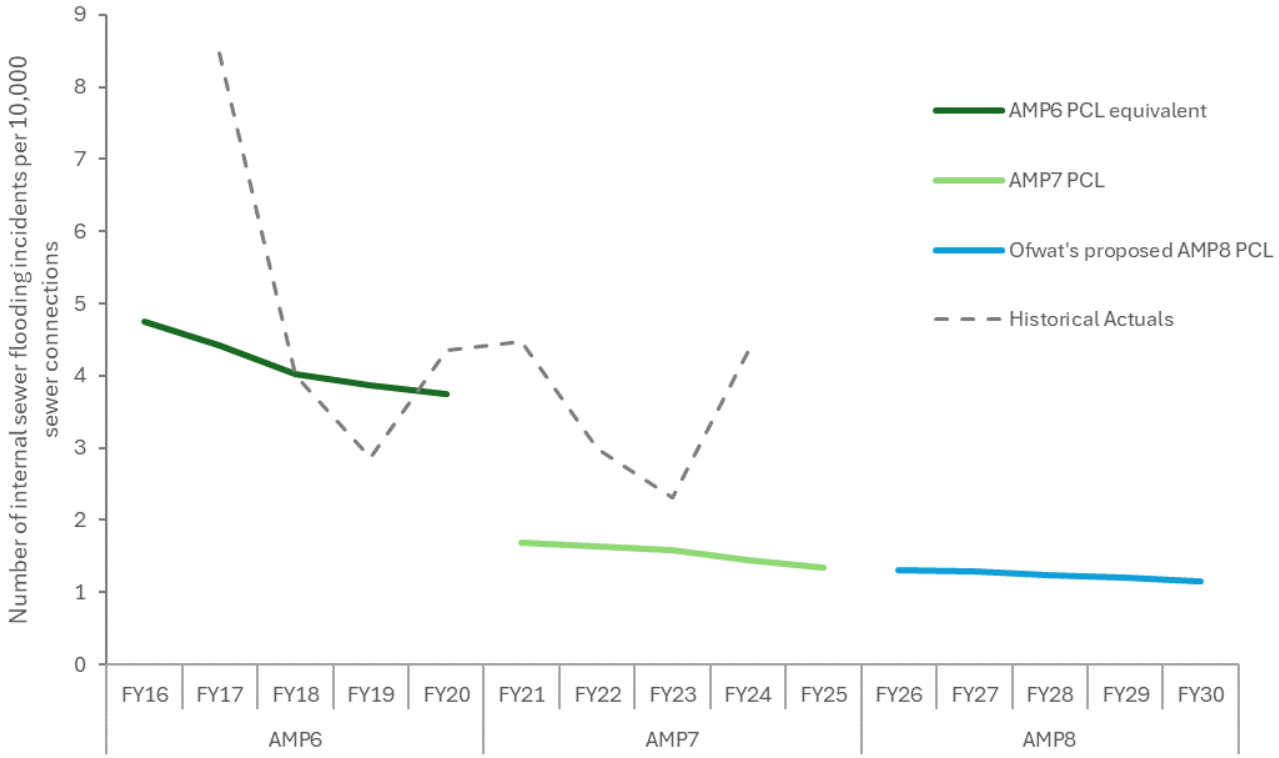
Company	Company Name	FY25 forecast	FY30 PCL	Improvement target %
UUW	United Utilities	2.88	1.96	32%
YKY	Yorkshire Water	2.29	1.76	23%
ANH	Anglian Water	1.46	1.15	21%
WSH	Dwr Cymru Welsh Water	1.33	1.07	20%
TMS	Thames Water	1.82	1.52	17%
SRN	Southern Water	1.33	1.12	16%
SVE	Severn Trent	1.34	1.14	15%
SWB	South West Water	0.80	0.69	15%
WSX	Wessex Water	1.31	1.19	9%
NES	Northumbrian Water	1.23	1.17	4%

Company	Company Name	FY25 forecast	FY30 PCL	Improvement target %
HDD	Hafren Dyfrdwy Cyfyngedig	2.72	2.62	3%

Source: Analysis of companies' PR24 business plan submissions

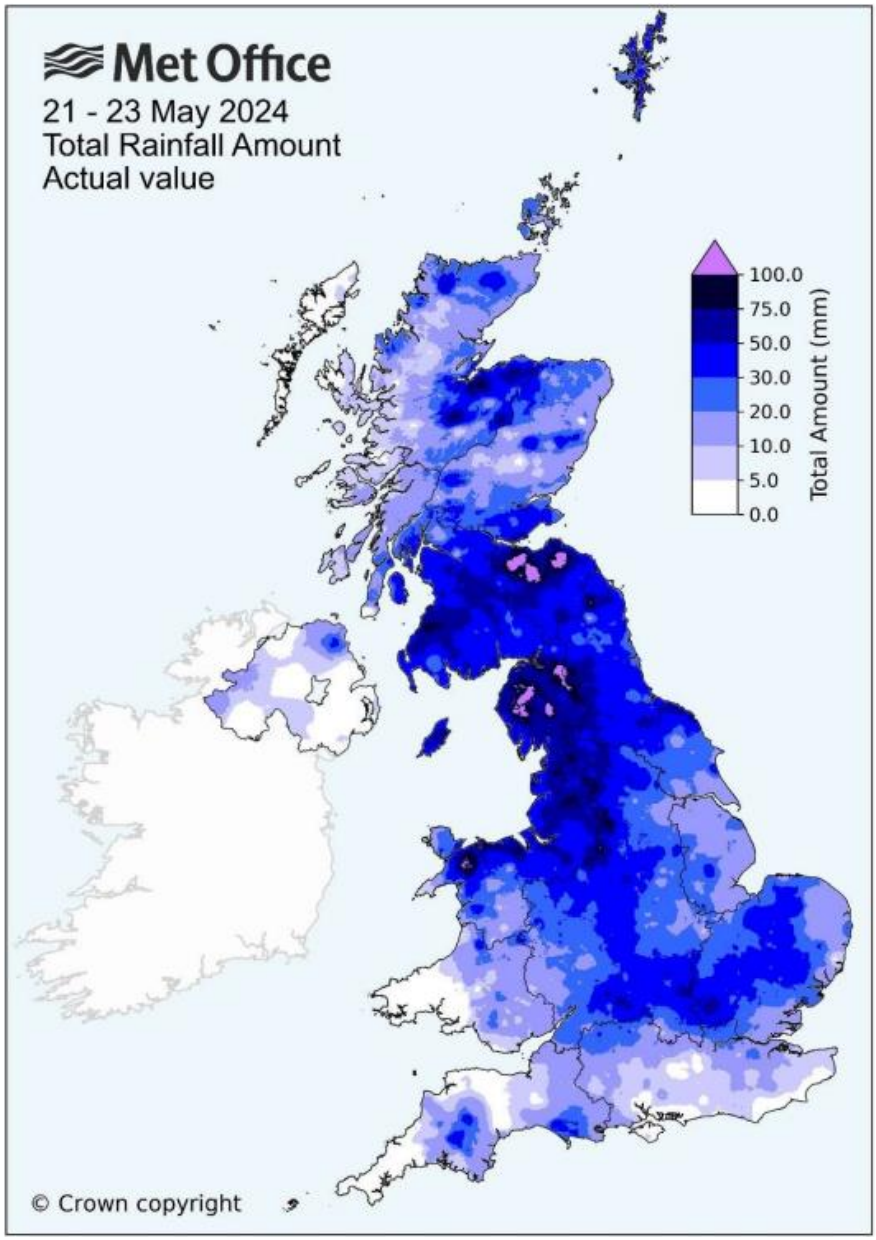
As a result of UUW's unique operating circumstances, we have **never** hit Ofwat's proposed AMP7/8 PCL at any point within the historical record. Figure 12 shows UUW's historical incident numbers against Ofwat's PCLs – there is a significant divergence between Ofwat's (AMP7 & AMP8) PCL and attainable historic incident levels. Further, as shown in Figure 12, there was a significant step change in between UUW's AMP6 PCL, as inferred from the Sewer Flooding and Private Sewers Service Index, and the upper quartile PCL adopted by Ofwat in AMP7. This transition was not accompanied by a corresponding step change in allowances for reducing flood risk. It therefore cannot be concluded that we have, and crucially received the allowances that would enable us to, 'reset' our performance to be in line with the AMP7 PCL. Ofwat's decision to set the 2024-25 baseline position aligned to the PR19 2024-25 PCL (1.34) for all companies except for Hafren Dyfrdwy is therefore based upon the highly flawed assumption that this is an attainable outturn position for UUW.

Figure 12: UUW's historical internal sewer flooding incident levels (FY17-FY24) against Ofwat's historical PCLs and proposed PCL for AMP8. UUW has never come close to achieve Ofwat's view of AMP7/AMP8 PCL as a result of our unique operating circumstances.



Indeed, UUW has already exceeded this number of incidents in FY25 as a result of an intensely wet May, in which over 50 mm of rain fell widely over North West England over a 3 day period (21 to 23 May) as shown in Figure 13. 22nd May marked the wettest spring day on record for the North West Region[23].

Figure 13: Met Office Total Rainfall Data for 21-23 May. As a result of an exceptionally wet May, UUW has already exceeded its PR19 PCL and therefore this cannot be considered the baseline for our PR24 PCL.



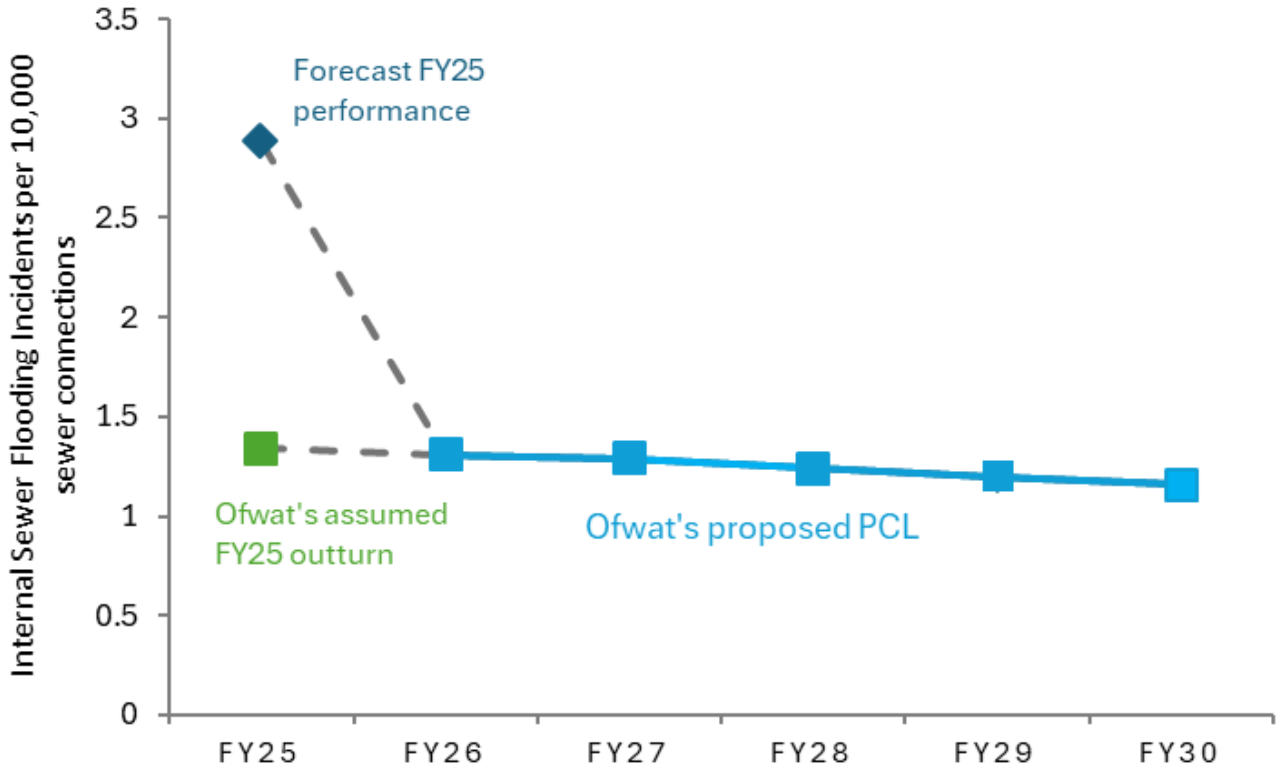
Source: Met Office, 2024[24]

[23] Microsoft Word - 2024_05_wet_weather_1.docx (metoffice.gov.uk)

[24] Microsoft Word - 2024_05_wet_weather_1.docx (metoffice.gov.uk)

Based upon our forecast FY25 incident numbers, Ofwat's 2029-30 PCL represents a 60% reduction over the course of the AMP, rather than the 13% reduction Ofwat claims this entails for companies (Figure 14). We consider that such a reduction fails to meet Ofwat's stretching but **achievable** test and consider that our proposed 31.9% reduction much better satisfies this criteria, delivering the largest proposed percentage reduction in the industry from companies' 2024-25 forecast..

Figure 14: Ofwat's assumption that UUW will attain the PR19 PCL in FY25 in highly flawed. UUW's forecast number of incidents means we must deliver a 60% reduction in incidents to hit the FY30 PCL, not the 13% Ofwat assumed.

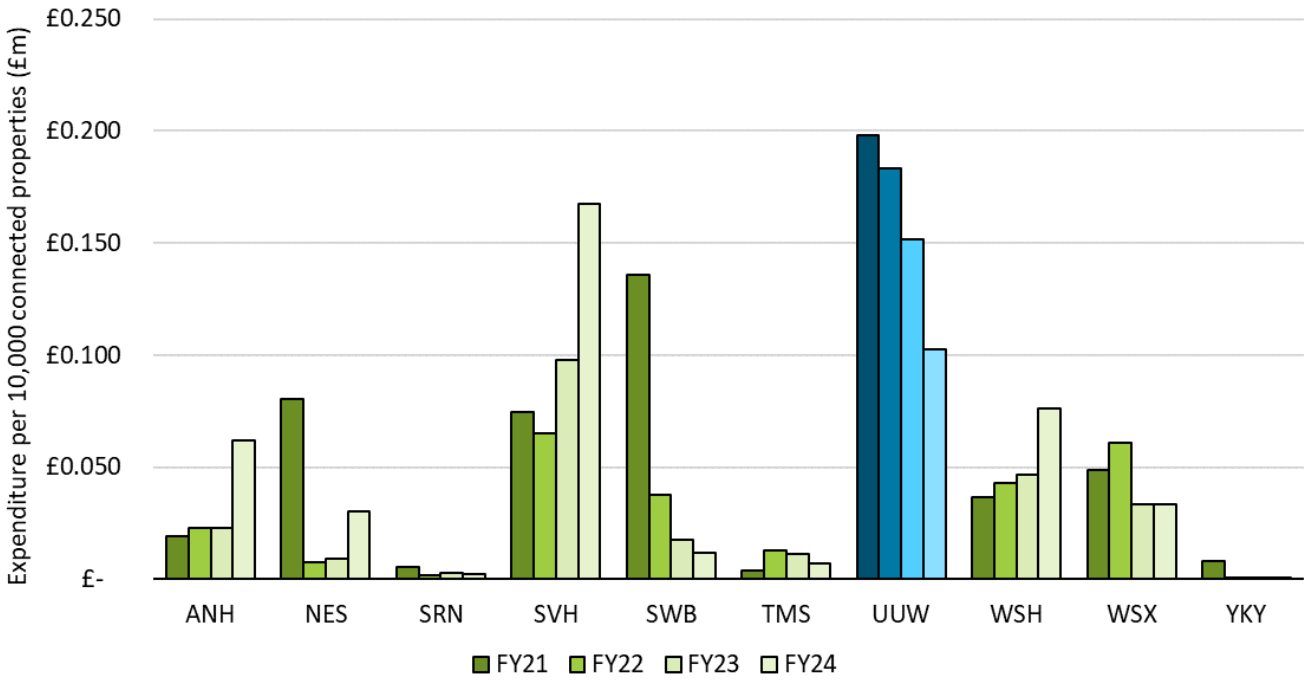


Source: Ofwat's draft determination performance commitment levels (PCLs) for internal sewer flooding[25]

[25] https://www.ofwat.gov.uk/wp-content/uploads/2024/07/PR24-DD-PCM_Internal-Sewer-Flooding.xlsx

UUW's failure to attain this level of incidents is in spite of our significant investment to reduce 'controllable' FoC flooding and increase resilience to severe weather (as set out in section 0). Indeed, as outlined in *UUW_CAC_002* and *UUW30 PR24_ISF_Internal Sewer Flooding*, UUW has had by far the largest expenditure on 'reducing flood risk for properties' per 10,000 sewer connections in AMP7 to date (Figure 15).

Figure 15: Expenditure on 'reducing flood risk for properties' per 10,000 sewer connections for 2020/21 to 2023/24



Source: Ofwat, PR24 wastewater cost assessment master dataset

Thus, it is clear that unless we invest billions of pounds in surface water separation measures, a PCL of 1.16 incidents per 10,000 sewer connections is exceptionally challenging for UUW, despite significant investment in reducing flood risk through our base allowances.

As outlined in section 3, in our PR24 business plan submission, we undertook a reproducible econometric modelling analysis to define PCLs for all companies on a common basis, by adjusting for regional environmental operating circumstances, namely urban rainfall, the proportion of combined sewers and FSE density. Whilst we maintain that this approach provides Ofwat with a mechanism for normalising PCLs on a consistent basis across the industry – similar to the way in which Ofwat normalises for scale-, first and foremost, we strongly consider that Ofwat should adopt a company-specific PCL for UUW given we are a clear industry outlier with regard to our combination of exogenous factors (Figure 7).

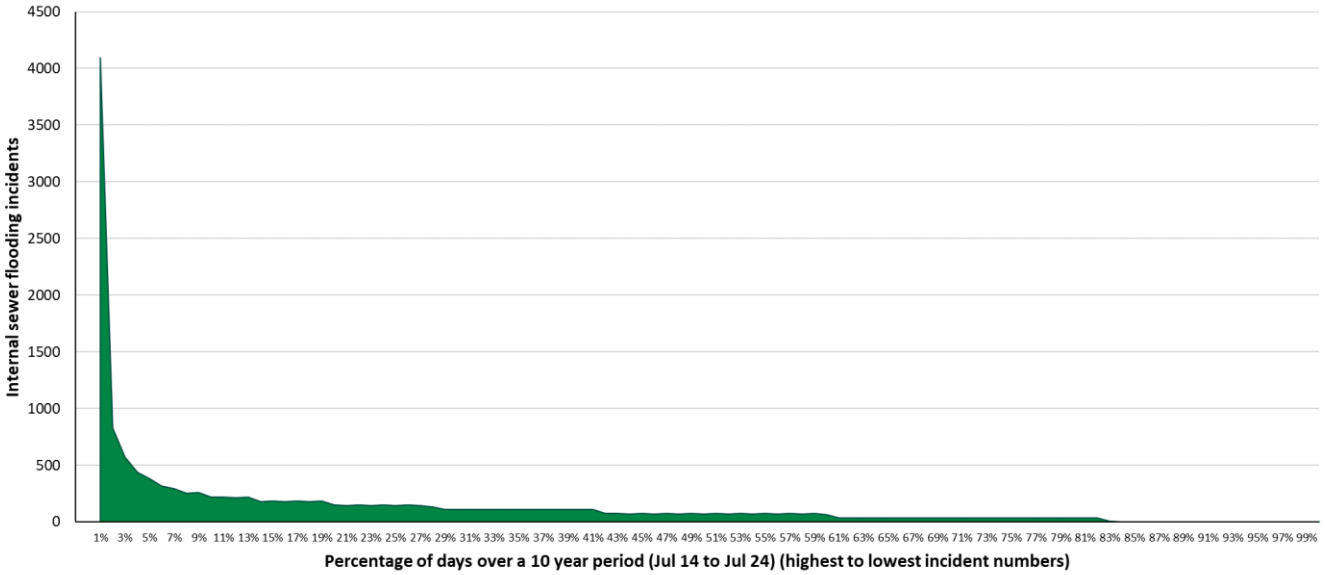
4.2 Ofwat's proposal to remove the underperformance collar for this measure

UUW is further concerned to understand that Ofwat has retained plans to remove the underperformance collar for this measure at draft determinations. As internal sewer flooding has been demonstrated (see UUW30 PR24_ISF_Internal_Sewer_Flooding) to be highly sensitive to exogenous factors, without a collar, companies are exposed to an unacceptable level of financial risk for severe weather events that are largely outside of their control. Whilst UUW, and all other companies, has had a collar on this measure in AMP7, this has not disincentivised us from delivering performance improvements. In our PR24 submission we demonstrated that UUW has had by far the largest total expenditure of all companies on 'reducing flood risk for properties' per 10,000 sewer connections within AMP7 to date. In AMP7 to date we have invested over £200 million in strategic initiatives to reduce flood risk, including the installation of over 17,500 sensors as part of our DNM operating model, and over £35 million investment in our hydraulic flood risk resilience schemes

In its' draft determinations, Ofwat states that *'Severn Trent Water and United Utilities commented on the impact extreme weather and regional variations have on this performance commitment. We said in our PR24 methodology why we consider a general exclusion policy would not be appropriate'*[26]. Whilst we cannot comment on Severn Trent Water's submission, this misrepresents the approach embedded in UUW's PR24 submission. UUW **did not** seek a general exclusion for severe weather**.** Rather we are requesting that Ofwat includes an underperformance collar for this measure to restrain the level of risk that companies are exposed to due to exceptional weather events outside of their control. In failing to apply risk protections in the form of a collar, this would expose companies to risk beyond the desired +/- 1 to 3% RoRE impact as the impact of exceptionally severe weather is theoretically unconstrained.

Our overall internal sewer flooding performance is heavily skewed by exceptional weather events. This is demonstrated by the fact that **over the period 2014/15 to 2023/24, 29% of all reportable internal sewer flooding incidents occur on 1% of the days, coincident with severe weather events.** Figure 16 shows the proportion of incidents that occur on the worst 1% of days in a 10-year period through to those days in which no incidents were recorded; a small number of days account for a disproportionate number of incidents.

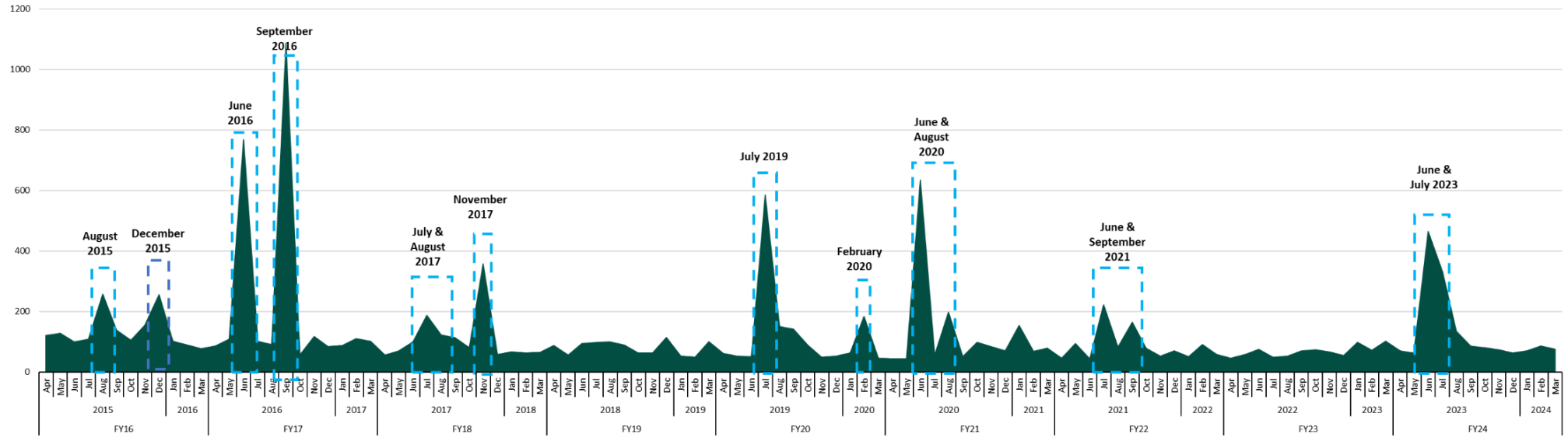
Figure 16: The total number of internal sewer flooding incidents experienced on the worst 1% of days for incident numbers in a 10 year period through to those days on which no internal sewer flooding incidents were experienced. The worst 1% of days on record account for 29% of incidents, demonstrating the extent to which internal sewer flooding numbers are skewed by exceptional weather events.



An alternative way of visualising the effect of severe weather upon sewer flooding levels is displayed in Figure 17. Figure 17 documents a month-by-month view of the number of internal sewer flooding events recorded by UUW since 2014-15, with the historical record being punctuated by sudden spikes in numbers coincident with severe rainfall events in the North West. As referenced in our PR24 submission (UUW30, page 41), an example of a particularly exceptional period was September 2016 in which exceptionally severe weather, with localised peak return periods exceeding 1 in 1000 year, hit Manchester and Stockport and resulted in 933 hydraulic and severe weather internal sewer flooding incidents over two days. A further 506 incidents were recorded in June 2016 due to a series of flash flooding events between 5th-16th June, with return periods in areas of Manchester, Lancashire, Cheshire and Merseyside exceeding 1 in 300 years. Under Ofwat's current proposed design for the internal sewer flooding performance commitment, **these few days of rainfall in June 16 & Sept 16 alone would have resulted in an underperformance penalty of £95.1 million.**

[26] PR24-draft-determinations-Delivering-outcomes-for-customers-and-the-environment-1.pdf (ofwat.gov.uk), page 106

Figure 17: The impact of exceptionally severe weather on the number of sewer flooding incidents can be clearly seen in UUW's historical record, with large spikes observed in a short time frame.



Source: UUW's internal sewer flooding data

Further, in 2023/24, the second wettest 12-month period in the North West since 1871[27], 27% of our total internal sewer flooding incidents occurred over four days in June and July 2023. Under Ofwat's proposed incentive design for AMP8, these 4 days alone would have incurred an underperformance penalty of c.£25 million.

In its post draft determination meeting with UUW on 24.07.24, Ofwat outlined a view that internal sewer flooding can be resolved via operational interventions. Whilst operational measures can undoubtedly reduce the incident of internal sewer flooding, and as such UUW has undertaken significant investment in such measures as outlined in section 4.1, operational interventions are unable to prevent events such as these in which the hydraulic capacity of vast regions is exceeded. Protection against such low frequency, high magnitude events would require billions of investment in the separation of combined sewers and the construction of additional storage. Customers cannot be reasonably expected to fund WaSCs to weatherproof the network to protect against such exceptional rainfall events.

In its draft determinations, Ofwat appears to present our argument for a collar as in conflict with our statutory responsibility to effectually drain our area, stating:

"It is part of companies' core business to effectually drain their areas, deal with the contents of sewers and consider the long-term impact of any decisions. They have statutory duties to do so"[28].

We recognise, and take extremely seriously, our statutory responsibility to effectually drain our area. However, it is misplaced for Ofwat to conflate this responsibility with an expectation that companies will have been able to upgrade their networks to fully accommodate flows associated with exceptional weather events. Even if it was a physical possibility to upgrade our sewerage system to store and attenuate the flows associated with events like the > 1 in 1000 year event outlined above in September 2016, it would have been unacceptable to expect customers to fund the 100s of billions of investment it would take to do so. Ofwat itself appears to recognise this by setting performance targets that are greater than zero, thus demonstrating that some degree of sewer flooding incidents is likely to be consistent with companies' statutory duties. Further, in the Marcic vs Thames Water Utilities Ltd judgement, the Appellate Committee stated:

"This is not to say that 'effectually drained' sets an absolute standard. Flood water lying on a water meadow, for instance, is not of itself an indication that an area is not being properly drained. Effectual drainage is a question of degree. ***There will always be flooding caused by exceptional weather****. Current sewerage systems are generally designed to cope with storms which may be expected to occur once in thirty years.* ***The cost of improving systems beyond this, so as to cope with rarer events, would be excessive"[29].***

Additionally, with regards to the resolution of sewer flooding, Ofwat explicitly directed companies to 'develop solutions which are cost effective, efficient and cost beneficial' and recognised that 'most high-cost schemes have a relatively poor benefit cost ratio' in its PR09 final determinations for UUW (Section 4.7.2, page 94). Ofwat has therefore discouraged companies to propose investment in highly non-cost-beneficial schemes via its previous price reviews. Indeed, Ofwat stated within its PR09 final determinations that 'where a solution is not cost-beneficial companies should examine alternative solutions…possibly providing a slightly lower level of protection'. Ofwat's final determination allowance for PR09 was £46.91m as a service enhancement for sewer flooding and companies were instructed to 'prioritise investment within the financial constraints of the final determination' (Section 4.7.2, page 94). Enhancement allowances for sewer flooding have remained at a similar magnitude since PR09 and therefore companies cannot have been expected to have invested billions to weatherproof the network (e.g. making a significant reduction in combined sewers) to protect against all eventualities and/or for companies in adverse regions to be able to achieve equivalent numbers of sewer flooding incidents as companies in more favourable regions.

We therefore consider that the re-establishment of a penalty collar on this measure is critical to protect against excessive exposure due to severe weather events outside of management control and thereby avoid exposing

[27] North West water situation: March 2024 summary - GOV.UK (www.gov.uk)

[28] PR24-draft-determinations-Delivering-outcomes-for-customers-and-the-environment-1.pdf (ofwat.gov.uk), page 106

[29] House of Lords - Marcic (Respondent) v. Thames Water Utilities Limited (Appellants) (parliament.uk)

companies to risk beyond the desired +/- 1 to 3% RoRE range. We raise substantive concerns with Ofwat's calculations of UUW's ODI payments risk as outlined in Figure 12 of 'PR24 draft determinations – Delivering outcomes for customers and the environment'. Ofwat's calculations imply that UUW's P10 underperformance risk across Wastewater is the lowest of all companies at -1.22% of RoRE. We estimate that performance at the P10 level on the internal sewer flooding measure alone as defined in the draft determination would yield a c.£(314) million penalty over AMP8 and -1.4% of RoRE (using Ofwat's DD RoRE), implying an average of £(63)m per annum. This compares to Ofwat's DD P10 assessment for Internal Sewer Flooding of -0.19% of RoRE[30].

We estimated our P10 for this measure based on our historical incident levels but adjusting this to account for the investment we have undertaken, and plan to undertake in AMP8, to reduce FoC flooding and increase resilience to severe weather. Specifically, we assumed that the North West experiences two storm events of a similar magnitude of those observed in FY17 in each year of the AMP, but crucially, calibrated the resultant incident numbers to account for the benefits of the investment that we have undertaken to reduce our baseline levels of FoC flooding and reduce the number of properties at risk of flooding in a storm. The P10 also gradually decreases over AMP8 (Table 2) to reflect that, whilst the storm impact may remain comparable, our investment plans will reduce the underlying level of FoC incidents.

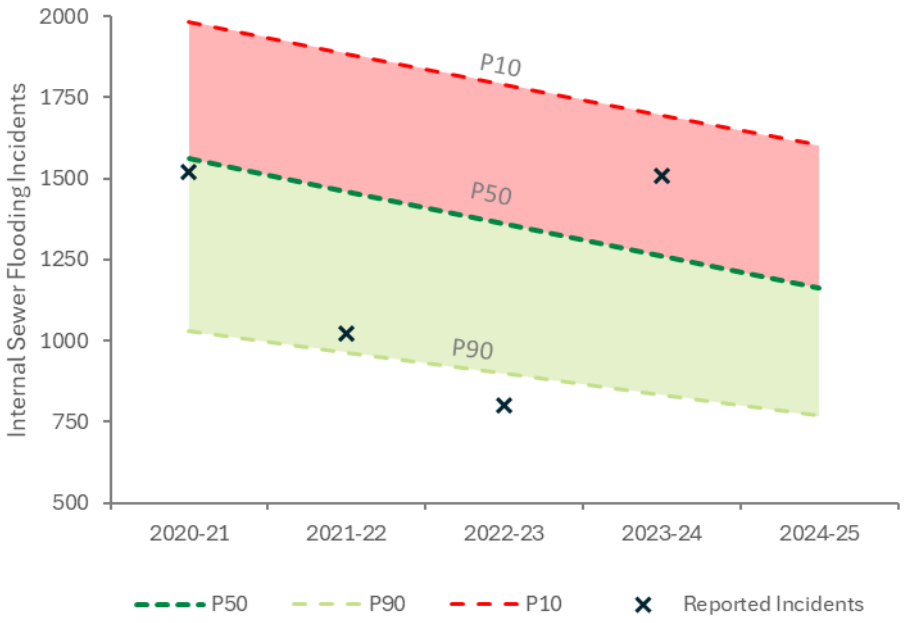
Table 2: UUW's calculation of the P10 for internal sewer flooding under Ofwat's proposed PC design

	2025-26	2026-27	2027-28	2028-29	2029-30	Total
P10 (number of sewer flooding incidents per 10,000 sewer connections)	4.65	4.39	4.12	3.86	3.62	
P10 (£m underperformance penalty)	-72.68	-67.28	-62.66	-57.88	-53.51	-314.00

We consider that our P10 estimation represents a reasonable worst-case scenario, with 2 of the 4 years of AMP7 to date experiencing total incident numbers that are in line with our calculated P10 for AMP8. Further, comparison of observed internal sewer flooding incident numbers in AMP7 to date with the P10/P50/P90 ranges that we calculated at PR19 demonstrates that our forecasts are reasonable and broadly capture the range of potential internal sewer flooding scenarios we experience (Figure 18). Three of the years fell within the P10-P90 range. The 2022/23 outturn was slightly above the P90 level, reflecting that this was our best ever performance and the results of the combined factors of the benefits from DNM being realised and the weather being particularly dry. Our 2023-24 outturn was within the P50-P10 range, demonstrating that our method for estimating P10s is robust and our AMP8 projections should be considered a suitable estimation of potential risk.

[30] Taken from cell M17 of Ofwat's DD document "PR24-DD-ODI-risk-5-Year-Additive-RoRE-Payments-model.xlsx" tab "% RoRE Wastewater Summary"

Figure 18: UUW's PR19 P10, P50 and P90 estimations for internal sewer flooding alongside observed AMP7 incident levels to date. Our method of estimation was therefore sensible and broadly able to capture the range of scenarios experienced.



Conversely, Ofwat's performance assessment appears to have been calculated from an industry historical performance view with the exclusion of outliers. We do not consider than it is appropriate to apply an industry-average performance to UUW's estimated performance ranges, given the environmental factors which affect UUW's performance and have not been allowed for in Ofwat's outcomes assessments. We also do not think that Ofwat should exclude outliers from the historical data set. In Ofwat's DD document "PR24-DD-ODI-risk-Monte-Carlo-set-up.xlsx" tab "Cover" Ofwat states:

"The normal distribution is informed by historical percentage difference between company performance and the performance commitment level (PCL) target using data from 2011 to present, where available. To form a normal distribution, we remove outliers that may skew the normal distribution values."

Over such a long data set, such outliers are highly likely to represent statistical P10 and P90s and should not be excluded. We therefore consider that our P10 estimation is a more robust representation of the statistical P10 of UUW's performance in AMP8. In its current design, this measure therefore is a potential significant source of intolerable negative skew in the outcomes package and a collar must be re-instated.

4.3 Magnification of ODI rates from AMP7 levels

Ofwat has significantly increased the ODI rate for Internal Sewer Flooding significantly since its indicative ODI rates which we used in our PR24 business plan submission. This indicative ODI rate was already a significant increase on Ofwat's ODI rates in PR19 Final Determinations. It is also significantly out of line with Ofwat's PR24 customer research which sought to value this ODI and specifically asked a representative sample of customers what they would value the avoidance of the service failure of one internal sewer flooding incident. Finally, it is also out of line with UUW's own customer research at PR19 which valued the same service area. Table 3 below shows these various ODI rates and iterations of Ofwat's PR24 valuations for Internal Sewer Flooding and shows the contrast of these past ODI rates and valuations with the ODI rate in Ofwat's draft determination. The table highlights how significantly Ofwat has increased certain ODI rates and how little lack of regulatory stability is evident in the ODI valuations over AMP7 and AMP8. In particular, the lack of regulatory stability in decision-making is detrimental to companies' ability to plan for efficient totex programmes, seeking to improve these performance areas.

Table 3: The history of iterations to Ofwat's proposed ODI rate for internal sewer flooding

Unit: per 10,000 sewer connections		£m
PR19	UUW business plan submission	2.511
PR19	Ofwat fast track draft determination (note 1)	5.138
PR19	Ofwat slow track draft determination	9.765
PR19	Ofwat final determination	7.966
PR24	Feb '23 Ofwat indicative rates	0.779
PR24	Apr '23 Ofwat indicative rates	1.246
PR24	Jun '23 Ofwat indicative rates	15.098
PR24	UUW business plan submission	15.098
PR24	Ofwat draft determination	21.737
Note 1 - underperformance rate All ODI rates presented in 2022/23 CPIH FYA price base		

Source: Ofwat's proposed ODI rates across PR19 and PR24

It must be noted however that we considered the acceptability of the final determination AMP7 ODI rate in the wider context of the underperformance collar on this AMP7 PC and also, more widely, in the context of the broader suite of ODIs.

Ofwat's DD ODI rate values one internal sewer flooding incident at £60,720. Because an incident impacts the use and amenity of a customer's home (or business property), the ODI value should be sense checked to the value of such properties. Compared to the average house price in the North West of England of £218,000[31], this valuation for one flooding incident appears significantly over-valued. This is in stark contrast to Ofwat's customer research results where household customers valued avoiding one incident at £1,039 (2021/22 FY average price base), non-household customers valued it at £94,264. This gives a combined service failure avoidance valuation of £5,057. Ofwat's DD ODI rate is 12 times in excess of the customer valuation. Whilst it is rightly identified by the government as one of its strategic priorities, and we prioritise it also in our service recovery and delivery, this significant over-valuation when compared to Ofwat's customer research cannot be justified. Whilst Ofwat claims that it has applied a top-down approach to setting ODI rates uses customer research, it should ensure that the actual ODI rates are calibrated, checked and limited by the results of its own research. We cannot see a reasonable justification why the DD ODI rate for ISF is so grossly overpowered, when set against past ODI rates and customer research results for the same performance area. For this reason, we propose an alternative ODI rate, set at Ofwat's PR24 final methodology indicative ODI rate.

Inappropriate ODI rates and performance levels which are not calibrated to each other will lead to uneconomic decision-making by companies, chasing uneconomic performance levels to avoid over-valued ODI rates, not grounded in customer valuations. Such uncalibrated outcomes will lead to ineffectiveness of incentives and will incentivise inefficient allocation of resources and investment decisions, to the detriment of company, customers and the environment.

Ofwat appears to have conducted a form of calibration of the ODI rate, comparing it to P10 and P90 risk ranges. We consider that Ofwat has used a significantly oversimplified risk range on certain ODIs, including ISF. Ofwat appears to have applied an industry average performance range to UUW's P10/P90 ISF performance range which is not appropriate given that UUW has not historically been allowed totex to invest in its assets to bring its operating environment onto a level playing field with that of the industry. Ofwat's assessment for the Internal Sewer Flooding P10 is -0.19% of RoRE[32]. However, we consider that this risk is significantly understated, as the risk posed by UUW's operating environment has not been considered in Ofwat's P10 estimation. UUW's estimation of

[31] Housing prices in Manchester (ons.gov.uk) (https://www.ons.gov.uk/visualisations/housingpriceslocal/E08000003/): "Across the North West, the average house price in May 2024 was £218,000, which was more than a year earlier (£211,000)."

[32] Taken from cell M17 of Ofwat's DD document "PR24-DD-ODI-risk-5-Year-Additive-RoRE-Payments-model.xlsx" tab "% RoRE Wastewater Summary"

the P10 risk based on Ofwat's DD PCL, ODI rate and absence of an underperformance collar is more in the region of -1.4% Ww RoRE. This is an unacceptable level of risk from one performance commitment alone and we therefore have factored this in to our DD response of a revised ODI rate, underperformance collar and company specific PCL.

4.4 Inconsistency in approach amongst the outcomes package

Across Ofwat's outcomes package, there are inconsistencies in the approach adopted, and the rationale provided, amongst the measures. Firstly, Ofwat has recognised the need for a company-specific target for storm overflows, and FY25 baseline, on the basis that UUW provided compelling evidence to support a different level of performance. As storm overflows are designed to act as relief valves for combined sewers during periods of heavy rainfall, there are many commonalities between our case for company-specific targets for internal sewer flooding and storm overflows. We therefore consider that Ofwat's reasoning for a company-specific target for storm overflows should equally apply to internal sewer flooding.

Additionally, Ofwat has proposed a company-specific PCL for external sewer flooding to avoid 'setting an unachievable level of stretch for some companies in the 2025-30 period'[33]. It is unclear why such a principle applies to external sewer flooding but does not apply to internal sewer flooding, especially when consideration is given to UUW's evidence that internal sewer flooding is more sensitive to exogenous factors than external sewer flooding (UUW30_PR24_ISF_Internal_Sewer_Flooding).

Whilst we recognise that PCLs were set on a company-specific basis for external sewer flooding in AMP7 and on a common basis for internal sewer flooding, companies nevertheless cannot be assumed to be starting from an equivalent starting position for internal sewer flooding. Companies in regions with adverse operating circumstances have not received the billions of investment necessary to aim for, much less achieve, the AMP7 PCL. Indeed, as outlined in section 4.1.4, a step change from a company-specific PCL in AMP6, as measured by the Sewer Flooding and Private Sewers Service Index, to an upper quartile AMP7 PCL (Figure 12), was not accompanied by a corresponding step change in allowances for reducing sewer flooding risk. It is therefore unrealistic to expect that UUW has been able to make an unprecedented step change to reset our baseline position to be in line with the AMP7 PCL. As such in line with our PR19 business plan submission, UUW has been working along a highly stretching two-AMP trajectory to an end of AMP8 position of 715 incidents.

The principle that companies are not starting from a common position, nor can they achieve equivalent incident numbers by the end of AMP8, is therefore equally, if not more applicable for internal sewer flooding. We understand that customers undoubtedly value external sewer flooding more than internal sewer flooding but this is reflected in the incentive rate being nearly three times stronger for the latter measure and therefore does not need to be reflected in different PCL design.

Additionally, there are substantial inconsistencies in the approach adopted by Ofwat to adjust companies' PCLs where it is viewed that these are unachievable. For example, for both the repairs to burst mains and sewer collapses performance commitments, Ofwat has proposed a re-baselining of Southern Water's PCLs on the basis that the company has failed to achieve its PR19 PCL and therefore 'in hindsight, this level appears to be too stretching'[34]. Arguably, performance on these operationally driven metrics is under a much greater degree of management control than hydraulic drivers of sewer flooding. It is therefore unclear why – consistent with the treatment applied to Southern Water on several measures – an adjustment of the baseline has not been deemed appropriate for UUW's PCL for internal sewer flooding where performance is highly sensitive to exogenous factors. In section 4.1.4 we present evidence that UUW has never been able to achieve Ofwat's AMP7 PCL in its historical record and, as such, we consider that a comparable adjustment should apply to UUW's proposed internal sewer flooding PCL.

Finally, we note that in its' draft determinations for water supply interruptions, Ofwat has retained the underperformance collar, stating 'we recognise the potential for large underperformance from external factors.

[33] PR24-draft-determinations-Delivering-outcomes-for-customers-and-the-environment-1.pdf (ofwat.gov.uk), page 110

[34] PR24-draft-determinations-Delivering-outcomes-for-customers-and-the-environment.pdf (ofwat.gov.uk)

This is a potential significant source of negative skew in the outcomes package'35. We consider that such an approach is also valid for internal sewer flooding, where low probability high consequence single events can similarly skew performance for the year and call on Ofwat to ensure consistency in approach between measures.

5. What Ofwat can do in the final determination to address these issues

We propose that Ofwat should accept our proposals for an environmentally-adjusted PCL. We are confident that UUW's proposed PCL of 1.96 incidents per 10,000 sewer connections by 2029/30 is a highly stretching proposal, delivering the highest percentage reduction in the number of internal sewer flooding incidents in the industry (31.9%), upholding our PR19 business plan submission commitment and going beyond the maximum level of performance modelled to be deliverable within the North West. The PR19 PCL cannot be assumed to represent an attainable baseline level of internal sewer flooding incidents for UUW in FY25 – indeed, as a result of an exceptionally wet May, incident levels have already exceeded this baseline less than midway through the year. As a result of our unique operating circumstances, even whilst making progress on the two-AMP strategy outlined at PR19, UUW has not been able to 'reset' our performance in line with the PR19 PCL and Ofwat should reflect this in a company-specific PCL for PR24.

Critically, Ofwat should reinstate the collar on this performance commitment to prevent the outcomes package being skewed by exceptional weather events that companies cannot reasonably be expected to protect against without an unacceptable impact on customer bills. We propose that a collar set at 0.5% of Ww RoRE is suitable for the following reasons:

- Such a collar is sufficiently high that it would only be exceeded during years of extreme rainfall and therefore will not discourage companies from driving performance improvements but solely protects against significant financial risk exposure from exogenous events. Indeed, if UUW were to hit the collar in every year of AMP8, this would incur an underperformance payment of £112 million, acting as a significant deterrent;
- Whilst UUW, and all other companies, has had a collar on this measure in AMP7, this has not disincentivised us from delivering performance improvements. In our PR24 submission we demonstrated that UUW has had by far the largest total expenditure of all companies on 'reducing flood risk for properties' per 10,000 sewer connections within AMP7 to date. As a result, we do not believe that the application of a collar discourages investment in resilience measures, but rather allows us to promote a sustainable and affordable programme of rainwater management staggered across multiple AMPs whilst protecting against financial exposure resulting from exceptional exogenous events; and
- The introduction of the customer-focused licence condition in February 202436 provides an additional layer of protection for customers such that if a company hits a collar in a given year, they are still incentivised to drive performance improvements or receive a fine of up to 10% of company turnover.

Ofwat should amend the ODI rate to properly reflect the value that customers place on this performance area and the risks that which UUW faces given its operating environment. We propose that Ofwat should apply the ODI rates which we submitted in our PR24 business plan. Given the P10/P90 risk range which UUW faces we consider this to be an appropriate ODI rate in the context of the overall Outcomes package.

Table 4 outlines UUW's PR24 proposals for internal sewer flooding – these remain the same as stated in our Oct 23 submission.

[35] PR24-draft-determinations-Delivering-outcomes-for-customers-and-the-environment.pdf (ofwat.gov.uk), page 104

[36] Customer-focused licence condition - Ofwat

Table 4: UUW's PR24 proposals for Internal Sewer Flooding

Units: incidents per 10,000 sewer connections	Forecast	DD response				
	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
UUW PCL (units)	2.88	2.32	2.23	2.14	2.05	1.96
UUW PCL (incidents)	1,007	815	790	765	740	715
Underperformance collar (units)	4.00	3.35	3.26	3.17	3.08	2.99
Deadband				N/A		
Outperformance cap				N/A		
Enhanced threshold (units)	N/A	1.92	1.84	1.75	1.66	1.57
ODI rate - outperformance		15.098	15.098	15.098	15.098	15.098
ODI rate - underperformance		15.098	15.098	15.098	15.098	15.098

The current draft determination design of this performance commitment, with a common PCL, no underperformance collar and tripled ODI rates is unacceptable. UUW estimates that the underperformance ODI risk associated with this metric is -£314 million and as such is a potential significant source of intolerable negative skew in the outcomes package, amounting to -1.4% Wastewater RoRE. We therefore urge Ofwat to adopt our recommendations for this measure at final determinations.