
Draft Determination Representation: Price Control Deliverables

YKY-PR24-DDR-07-Price-control-deliverables



YorkshireWater

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1. Executive Summary

In our business plan submission, we proposed a package of 16 Price Control Deliverables (PCDs), to the value of £2.9bn, covering enhancement investment that met the materiality threshold. In the draft determinations, Ofwat have aggregated some PCDs, removed some PCDs, and introduced some new PCDs such that we now have a package of 17 PCDs with an overall value of £2.6bn. This allowance now covers enhancement investment as well as some components of base investment. This reduction in value is largely due to the efficiency reductions to our expenditure proposals applied by Ofwat. Every PCD has a non-delivery penalty to return funding to customers for any work not delivered. Some PCDs also have a delay penalty within AMP8.

We support the introduction of PCDs to directly hold companies to account for the delivery of major enhancement activity, so that our customers and our stakeholders can be assured that we are delivering on our commitments. We also welcome the introduction of certain policy changes such as positive incentivisation through two-way incentives, and the mechanism to hold a non-delivery payment if delivery is sufficiently early in the 2030-35 period. However, some of the proposed PCDs, in the detailed design, create perverse incentives, place disproportionate risks on specific areas of delivery, duplicate existing regulatory incentives, or are fundamentally undeliverable. Overall, the PCD regime is now a major source of downside risk in the PR24 package and change is needed to the PCDs as currently proposed. In general, Ofwat has created an imbalanced and punitive regime across outcomes and PCDs for the delivery of our work, which will make it very difficult to attract the investment necessary to deliver important improvement for our customers. Our comments are specific to Yorkshire Water; however we understand many of these concerns are common across the sector.

We calculate that there is a £40m to £80m risk from delays of around a year on delivery of some projects. These delays are not inconsistent with what we have experienced historically and can be attributed to factors outside of Yorkshire Water's control. The proposed PCD regime does not include a defined mechanism for changes should they be required. For example, changes may be required to delivery profiles or specific scheme outputs as a result of identification of an alternative solution (that is better value for customers) in the event of delays beyond Yorkshire Water's control.

In our response to the draft determination regarding PCDs, we have grouped our concerns into five cross-cutting areas:

- **Delivery Profiles** – We discuss the standardised delivery profiles that Ofwat propose to apply to two PCDs (*phosphorous removal and storm overflows*) and an analysis of the potentially negative impacts of imposing these profiles.
- **Scale and scope of penalties** – We look at the potential calculations for penalties across PCD and the level of risk this incurs for companies. We consider this penalty is disproportionate to the scale of the PCD. We also consider the risk of penalties being imposed in instances where external factors might cause delays. In some instances, we show that the delay penalty is inappropriate as it duplicates an existing mechanism incentivising timely delivery.
- **PCD scope** – We have reviewed the detailed deliverables that Ofwat have proposed for PCDs and highlighted where these deliverables do not align with our plans for most efficient delivery, misalign to statutory obligations, or where they are unfeasible to deliver.
- **Metering** – We have identified a range of material risks in regards to the PCD for metering, which we have set out.
- **Clarifications** – We have identified some inconsistencies in the data provided by Ofwat in draft determinations, which we consider will likely be errors, which we seek to clarify. We have also identified some proposed changes to PCD policies that we encourage further engagement on.

We understand many other companies have a similar set of concerns with PCDs on each of these topics. We consider that the solutions we propose can be straightforwardly applied to all companies, in most instances.

Where we disagree with the unit rate or total costs used by Ofwat to calculate specific elements of the PCD, we set these out in the relevant parts of our response on cost allowances. We expect that changes will be made to these allowances and appropriately flowed through into the PCD delay penalties and non-delivery penalties.

We are proposing that delivery profiles are revisited to align to Environment Agency (EA) agreed regulatory compliance dates and to operational realities, that delay penalties are removed where double jeopardy is likely, and that base funding allowances should be removed from the scope of PCDs.

2. Summary of Proposals

In the table below, we have summarised our key proposals, set out within this document, against Yorkshire Water’s required PCDs:

Table 1.1: Summary of Proposals against PCDs

| PCD | Proposals Summary | Relevant Chapter Sections |
|--|---|---|
| PCDWW2b - WINEP/NEP - Continuous river water quality monitoring | <ul style="list-style-type: none"> No specific comments on the PCD itself All general comments in this document relating to all PCDs apply | N/A |
| PCDWW5 - Storm Overflows | <ul style="list-style-type: none"> Propose new delivery profile, with smaller targets in year 4 and 5, rather than Ofwat’s proposed standardised profile Propose removal of delay penalties, as this PCD is subject to other statutory obligations. At a minimum, request exemptions to be made for delays due to unforeseen circumstances Clarification on new aggregation of this PCD | Section 3 Section 4 Section 7 |
| PCDWW10 - Phosphorus removal | <ul style="list-style-type: none"> Propose to revert to business plan submission delivery profile, rather than Ofwat’s standardised profile Request removal of delay penalties, as this PCD is subject to other statutory obligations Clarification of Ofwat’s inclusion of some permit-only schemes. We propose Ofwat remove these schemes from scope of the PCD | Section 3 Section 4 Section 7 |
| PCDWW12 - Treatment for tightening of sanitary parameters | <ul style="list-style-type: none"> No specific comments on the PCD itself All general comments in this document relating to all PCDs apply | N/A |
| PCDWW27 - Growth at Sewage Treatment Works | <ul style="list-style-type: none"> No specific comments on the PCD itself All general comments in this document relating to all PCDs apply | N/A |
| PCDWW24b - Sludge Storage (Cake pads) | <ul style="list-style-type: none"> No specific comments on the PCD itself All general comments in this document relating to all PCDs apply | N/A |
| PCDW11a - Supply | <ul style="list-style-type: none"> Propose to remove delay penalties due to many delays being beyond our control All general comments in this document relating to all PCDs apply | N/A |
| PCDW12 - Metering | <ul style="list-style-type: none"> Remove delay penalty due to overlap with ODIs. Remove Ofwat’s proposal to only deem assets with 95% successful data reporting as delivered | Section 5 Section 6 Section 7 |

| | | |
|---|--|--|
| | <ul style="list-style-type: none"> Remove need for third party assurance requirement, if Ofwat proceed with operability requirement Reduce scope of Metering PCD, and subsequent penalties. This should be based on deployment of meters only, as per companies' representation at submission Revision of PCD to consider considerable costs of meter relocation Clarification requested on duplication of Metering Deliverables | |
| PCDW13 & PCD14 - Water Quality (RWD and TOC) | <ul style="list-style-type: none"> No specific comments on the PCD itself All general comments in this document relating to all PCDs apply | N/A |
| PCDB1 - Mains Renewals | <ul style="list-style-type: none"> Propose Ofwat include renewals to Condition Grade 3 assets as part of compliant delivery under this PCD Propose that base funding be removed from the scope of the PCD | Section 5 |
| PCDWW30 Bioresources - IED | <ul style="list-style-type: none"> Clarification required on Ofwat's decision to include AMP9 schemes | Section 7 |
| PCDW15 - Lead | <ul style="list-style-type: none"> No specific comments on the PCD itself All general comments in this document relating to all PCDs apply | N/A |
| PCDW17 - SEMD | <ul style="list-style-type: none"> No specific comments on the PCD itself All general comments in this document relating to all PCDs apply | N/A |
| PCDW16a - Water Resilience | <ul style="list-style-type: none"> No specific comments on the PCD itself All general comments in this document relating to all PCDs apply | N/A |
| PCDWW5c - WINEP - Storm Overflows - PFF | <ul style="list-style-type: none"> No specific comments on the PCD itself All general comments in this document relating to all PCDs apply | N/A |
| PCDWW35 - PR19 WINEP Carryover | <ul style="list-style-type: none"> No specific comments on the PCD itself All general comments in this document relating to all PCDs apply | N/A |
| PCDWW32c – Living with Water | <ul style="list-style-type: none"> We have further discussed the scope of this PCD, and proposed a means for measuring delivery | Section 5 Annex 2 |
| Net Zero PCD | <ul style="list-style-type: none"> We have proposed the inclusion on a Net Zero PCD for Yorkshire Water | Section 5 |
| Resilience uplift (Water and Wastewater) | <ul style="list-style-type: none"> We do not propose a PCD for the resilience uplift | N/A |

3. Delivery Profiles

3.1 Overview

In the draft determinations, Ofwat has, for some PCDs, provided a standardised delivery profile against which each company will be measured and any penalties applied. These delivery profiles have been applied to three material PCDs with associated delay penalties; **phosphorous removal, mains replacement and storm overflows**. In its determination of a delivery timeline, Ofwat has assumed linearity between expenditure and completion of deliverables. However, Ofwat’s approach does not consider the complexity of activities and varying time demands for each PCD, and subsequently under these proposed profiles Yorkshire Water will not be able to serve its customers and communities in the most efficient way. In some areas Ofwat’s approach is not consistent with EA delivery profiles or the timing around demonstrating compliance. In this section we have outlined our concerns around the application of these profiles for **phosphorous removal** and **storm overflows**.

3.2 Changes requested

3.2.1 Storm overflows

Under the draft determinations, Ofwat proposed the following delivery profile for storm overflows:

Table 3.1: Draft Determinations – Ofwat’s Proposed Delivery Profile for Storm Overflows

| AMP Year | 2025-26 | 2026-27 | 2027-28 | 2028-29 | 2029-30 |
|-----------------------------------|---------|---------|---------|---------|---------|
| % Storage Equivalent (cumulative) | 5% | 15% | 35% | 65% | 100% |

We instead propose the delivery profile set out in **Table 3.2** below. This delivery profile is consistent with the length of time required for the individual schemes to be completed, and we provide more evidence for this in section 3.4.

Table 3.22: Yorkshire Water’s Proposed Delivery Profile for Storm Overflows

| AMP Year | 2025-26 | 2026-27 | 2027-28 | 2028-29 | 2029-30 |
|-----------------------------------|---------|---------|---------|---------|---------|
| % Storage Equivalent (cumulative) | 19% | 27% | 40% | 50% | 100% |
| % Storage cumulative | 5% | 15% | 30% | 46% | 100% |

We consider that Ofwat should remove the requirement to adhere to a standardised delivery profile, recognising the need for companies to spend on design and development activities in advance of delivery, throughout the AMP. If Ofwat choose to include a standardised profile, we consider that Ofwat should reduce the delivery targets for years 4 and 5, to account for schemes of this duration that cannot be brought forward. This recognises the delivery timescales required for some schemes within the scope of this PCD.

We have made further proposals with regards to the unit of measuring this PCD in [Annex 3](#).

3.2.2 Phosphorous removal

In Ofwat’s draft determination, the following delivery profile is proposed, across the industry, for phosphorous removal schemes:

Table 3.3: Draft Determinations – Ofwat’s Proposed Delivery Profile for Phosphorous Removal

| AMP Year | 2025-26 | 2026-27 | 2027-28 | 2028-29 | 2029-30 |
|--|---------|---------|---------|---------|---------|
| % of Population Equivalent Served (cumulative) | 0% | 5% | 35% | 65% | 100% |

Our expenditure profile, including the operational expenditure (opex) liability, was originally structured to deliver the Population Equivalent (PE) time profile as shown in **Table 3.4** and was planned according to the compliance dates set by the EA, which was set as March 31st 2030 for over 90% of the PE of the schemes.

We note Ofwat’s reasoning in section 4.2.1 of “**PR24 draft determinations: Price control deliverables appendix**”¹ and the replies from Ofwat to the questions raised in the Ofwat webinar for PR24 draft determinations – Wastewater price control deliverables (PCDs) held on 25th July 2024².

We acknowledge the concerns of both Ofwat and the UK supply chain that the enhancement programmes are back-end loaded. However, we have reviewed the financial outturn from the proposed delay penalty for several delivery scenarios. We have identified an investment profile to even out the capex spend through AMP8, but commissioning these schemes ahead of the compliance date of 2030 will increase our opex spend above the reward. In the event that the PCD profile or funding mechanism is not changed from draft determination, our strategy will need to be to minimise the overall penalty, rather than delivering an optimal scheme, which is not in the interests of our customers. This is discussed in more detail in section **4.2**.

We remain of the view that a “build **and** operate” delivery profile, which is more stretching than that required for compliance with the WINEP, is inappropriate. Under this approach, we would be penalised simply for meeting our compliance requirements. This is an inconsistency between regulatory regimes.

In section **0** of this document, we propose removing the delay penalties associated with this PCD, given the overlap with WINEP compliance requirements. An alternative is that the incentive mechanism is adjusted to cover only “build” rather than “build and operate”. A further alternative is that the funding mechanism is adjusted (either the ratio of reward to penalty of 0.25 or the £ per PE mechanism) so that the reward compensates for the increased opex of early commissioning. We are committed to delivering these schemes to benefit our customers, but want Ofwat to consider alternative approaches that provide us with the incentives to deliver the best possible schemes.

Table 3.4: Yorkshire Water's Proposed Delivery Profile for Phosphorous Removal

| AMP Year | 2025-26 | 2026-27 | 2027-28 | 2028-29 | 2029-30 |
|--|---------|---------|---------|---------|---------|
| % of Population Equivalent Served (cumulative) | 7% | 7% | 7% | 7% | 100% |

3.3 Key arguments

We appreciate Ofwat’s setting of clear, ambitious deliverables across PCDs in the draft determinations, to ensure companies are measurably delivering the most possible benefits for their customers.

However the changes that Ofwat propose for these PCDs undermine the rationale which underpinned our design of the profiles submitted in our business plan. In our design of these profiles, we have considered; alignment with dates under other statutory compliance requirements, efficient delivery to maximise benefits and feasibility within the allowance provided for these areas.

We have set out our particular concerns around the delivery profile in more detail below:

3.3.1 Efficient delivery and optimisation

Imposing delivery profiles, coupled with delay penalties, may hinder our ability to deliver efficiently. This could push us to spend quickly and deliver rapidly, leading to missed opportunities for optimisation. We need time to investigate our solutions and address real-time issues effectively, ensuring high-quality assets. These objectives could be compromised if we

¹ [PR24-draft-determinations-Price-control-deliverables-appendix.pdf \(ofwat.gov.uk\)](https://www.ofwat.gov.uk/pr24-draft-determinations-price-control-deliverables-appendix.pdf)

² [QA-Price-control-deliverables-PCDs.pdf](https://www.ofwat.gov.uk/qa-price-control-deliverables-pcds.pdf)

are pressured to prioritise fast delivery of assets, over efficiency.

3.3.2 Alignment with Environment Agency timelines

For some PCDs, including those relating to storm overflows and phosphorous removal, we are also being monitored against compliance requirements by the Environment Agency (EA) through the delivery of the WINEP obligations. In the case of phosphorus removal, the EA has set regulatory compliance dates, against which to monitor our progress. The dates set by the EA align to the dates for Sanitary Treatment enhancement works, as the delivery of these schemes are integrated and often co-located. The compliance dates for Sanitary Treatment have not been altered under Ofwat's draft determinations, but rather remain aligned with the dates proposed by EA. As such, the dates for these two integrated schemes now differ. Division of these schemes would be an inefficient, higher cost approach for Yorkshire Water.

However, under Ofwat's draft determinations, a new delivery profile for the delivery of phosphorous removal schemes has been outlined. This delivery profile asks Yorkshire Water to deliver schemes earlier than under our agreed dates with the EA. If Ofwat applies this alternate delivery profile, Yorkshire Water will be monitored for compliance under two separate requirements, with differing compliance deadlines. We believe this places Yorkshire Water under undue pressure to deliver early. Typically, economic regulatory schemes reward companies for delivering earlier than the dates by which they are required to deliver, rather than penalising them even if they hit the targets³.

Under our compliance arrangements with the EA, we are also permitted a degree of flexibility in our approach. The EA allow us to renegotiate dates and approaches if circumstances or context changes, allowing us to remain dynamic and efficient in our approach. This will be undermined if we are asked to adhere to Ofwat's dates, with no mechanism to renegotiate timelines. It is also a duplication of regulatory mechanisms.

We are concerned that Ofwat has linked compliance with the PCD to EA certification, which is likely to align only with the statutory compliance date, typically 31 March, 2030. We have raised this with Ofwat, and it proposes a future process involving third party sign-off to be developed. We should not be held accountable for third party delays impacting our delivery profile. We have not included funding to procure an independent third party for verification of scheme delivery in our business plan submission. The current process whereby the EA confirm delivery of the WINEP and report on this through the existing Environmental Performance Assessment (EPA) regime provides Ofwat with independent assurance that schemes have been delivered and WINEP outcomes have been met.

We have further concerns around the application of delay penalties, should Yorkshire Water deliver this PCD to the dates proposed by Ofwat, rather than the EA. We have detailed this concern further in section 0.

3.3.3 Assumed linearity between delivery and spend

In the design of the draft determination delivery profiles, Ofwat has seemingly assumed a linearity between expenditure of schemes, and delivery of outputs. Whilst this has the benefit of simplicity, it does not reflect the more complex nature of the schemes delivery under PCDs. This is particularly the case in the storm overflows PCD, in which schemes can span 3 – 5 years. This means companies might be spending money on the schemes in years before a scheme output, as defined in the PCD, is delivered.

For example, in the case of the scheme at Scalby Mills (YSWS00513), our expenditure is spread across the AMP period, as demonstrated in Table 3.5 below. In the first three years of AMP, 53% of allowance for this scheme is spent, although benefits will not be realised until completion in 2030.

³ For example, Ofgem's Accelerated Strategic Transmission Investment (ASTI) regime rewards companies for outperforming, and penalises them for late delivery, compared to dates agreed with the companies and the Energy System Operator (ESO).

Table 3.5: Storm Overflows - S00513 Scheme Spend %

| Summary of Expenditure profile for Scalby Mills (delivered in 29-30) | | | | | | |
|--|---------|---------|---------|---------|---------|-------|
| Performance summary | 2025-26 | 2026-27 | 2027-28 | 2028-29 | 2029-30 | TOTAL |
| YSWS00513 SCALBY MILLS/CSO £m expenditure | 5.8 | 8.7 | 9.7 | 10.4 | 11.5 | 46.1 |
| Percentage of Spend % | 13% | 19% | 21% | 23% | 25% | |

We consider that this approach to setting a delivery profile is therefore flawed. We are concerned that phasing the work in this way will create a perverse incentive for companies to deliver smaller schemes, that potentially have less impact on customers and communities, in order to achieve compliance with the set delivery profile. More complex, and potentially higher-impact, schemes may be delayed and backloaded to avoid penalties.

3.3.4 Risk of strain on supply chain resources

For PCDs, such as Mains Replacement, where Ofwat have proposed a flat profile across the industry, we have identified a potential risk in availability of supply chain resources. If all companies are under pressure to deliver higher volumes of outputs in the same year, this will put considerable strain on partner availability, which has already emerged as a growing risk for our delivery. This alteration in demand will invariably drive-up costs of acquiring delivery partners, beyond what will have been factored into the allowance.

3.4 Yorkshire Water’s response to Ofwat

3.4.1 Storm overflows

As set out in section 7, we have re-aggregated our storm overflows PCD. As such, this PCD will only cover statutory requirements for storm overflows. Please note that the analysis below is based on the new aggregation of storm overflows PCDs and covers only the statutory overflows in the PCD.

The delivery profile set by Ofwat neglects to consider the duration and complexity of schemes under the storm overflows PCD. As demonstrated in Table 3.6: Storm Overflow Schemes Duration, 81% of our schemes have a duration of 3-5 years, with 32% of these having a duration of 5 years. Notably, these 5-year schemes deliver 58% of the equivalent storage that we are planning to deliver. The remaining 6% of storm overflow schemes, not covered in Table 3.6 are accelerated schemes with differing durations that we have not included here and account for 6% of our volume delivered by 2026.

Increasing our equivalent storage in years three and four of the AMP, as per Ofwat’s standardised delivery profile, is an unfeasible approach. To achieve this, we would have needed to have started the work in AMP7, before Ofwat even set the draft determination delivery profiles, which is clearly not possible.

Table 3.6: Storm Overflow Schemes Duration

| Scheme Duration (years) | 1 | 2 | 3 | 4 | 5 |
|-----------------------------|-----|-----|-----|-----|-----|
| % of Schemes | n/a | 13% | 26% | 23% | 32% |
| % Equivalent Storage | n/a | 10% | 14% | 12% | 58% |

Ofwat’s approach also does not appear to consider that EA guidance was significantly delayed and was only issued in July 2023, with WINEP schemes needing to be confirmed in January 2024, to meet this new obligation. This allowed little time for the schemes to be fully developed, and companies took different approaches to managing this constraint. Ofwat’s approach assumes companies have had full ability to design their schemes with all relevant information fully available, in effect not allowing for design changes to storage volumes based on more complete information. There appears to be no mechanism for including design changes to allow for fair costs for all.

It is clear from discussions with other WASCs that the scheme development process for WINEP submission has differed greatly between companies. Ofwat has not taken this into account in producing the PCD. For instance, Yorkshire Water considered the length of pipe to a storage location, from a desk top basis, whereas other companies assumed it could be built at the storm overflow location. Moving the take off point from the storm overflow spill pipe, due to engineering constraints that WASCs did not have time to assess, could significantly change the solution, equivalent storage, and costs. Ofwat’s proposed PCD does not allow companies the flexibility to deal with these practical challenges.

It is our view that this PCD should be managed at a programme level rather than a scheme-by-scheme level. This will allow the flexibility that will be needed to manage design changes that will be necessary to deliver an efficient programme.

Ofwat has not defined the rainfall to use in the spill frequency assessment. In our submission we used RedUP2 for this purpose but will move to RedUP3 for climate change perturbation. We will change our base rainfall series from stochastic to historical based on local rain gauges. This will change the storage numbers and solutions, but Ofwat’s approach stifles this, or assumes this work has already been fully completed, which would not be possible.

Solutions must be assessed individually, meaning precise solution parameters will likely change when assessed along with catchment options, such as considering tank drain down times and back-to-back storm risks.

3.4.2 Phosphorous removal

Ofwat is proposing that we deliver earlier than the dates set by the EA in the ‘WINEP PR24 Schedule’.

We have completed an analysis of the financial impact on delivering to Ofwat’s proposed delivery profile for phosphorous removal, and we have devised a build programme that flattens the capex spend profile across AMP 8.

Figure 3.1: Phosphorous Removal – Proposed Change TO Capex Profile

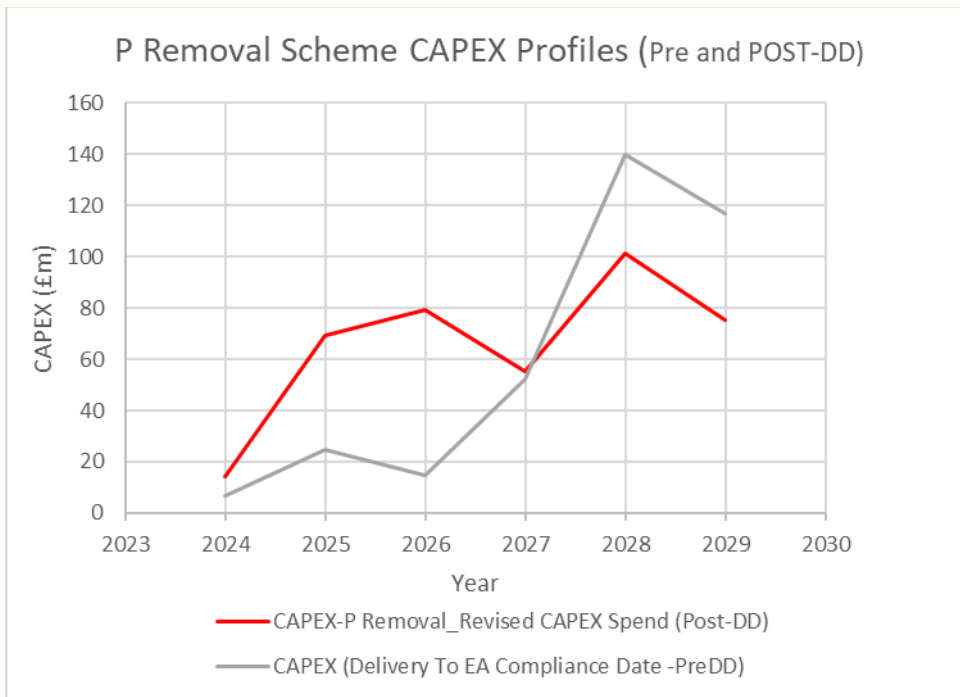


Figure 3.1 demonstrates the impact on capex if we comply with the ‘build’ requirement under this PCD. However, this does not consider the need to commission and operate these sites, beyond the initial build. In order to fully comply with the proposed incentive mechanism, we would need to commission and operate these accelerated sites 2 to 3 years ahead of the expected compliance date. We estimate that the minimum increase to operational expenditure would be £5m, and significantly more if we commission all early schemes. The increase in

operational expenditure is driven by the need to operate works for an extended period during the AMP8 cycle, due to delivery dates being set earlier than the EA compliance deadline.

We have generated several generic scenarios and estimated the reward, penalty and additional opex associated with each scenario. We cannot identify an accelerated programme which does not involve a net penalty unless we build the sites early but do not operate them until the end of the AMP; this clearly still suits concerns over the supply chain but is not beneficial to customers. The **tables below** summarise the net penalty calculations for different options associated with a strategic decision to accelerate, which show that all programme options, even “Build and Partial Operate” result in large additional operational costs:

- For option 1, we present 5 programme scenarios and assume we will operate the site as soon as it is built i.e. at 100% opex.
- For option 2, we assume that we accelerate delivery of 5 large sites to meet the delivery profile, we gain a £0.3m reward but incur a penalty of £0.1m with an additional opex burden of £5.1m for the extra years of site operation ahead of compliance date. Overall, we will be effectively in a £4.9m penalty for accelerating programme delivery to the delivery profile.
- For option 3, even if we deliver all schemes by the end of Year 3 of AMP8, we would receive £3.6m reward and zero penalty but incur additional opex of £19m, effectively a net penalty of £15.4m.

Table 3.7: Strategy 1- Programme Scenarios – Accelerate Delivery and Operate From Completion

| SCENARIO For P Removal Time Incentive | AMP 8 REWARD (£m) | AMP8 Penalty (£m) | OPEX Reward (£m) | Net REWARD (£m) (-ve=Penalty) |
|---|-------------------|-------------------|------------------|-------------------------------|
| Scenario 1- Programme According to EA Compliance Dates | £0.303 | £11.197 | £0.000 | -£10.894 |
| Scenario 2 - Match TI Profile (Bring Forward 5 largest Schemes by 1 or 2 years) | £0.321 | -£0.091 | -£5.100 | -£4.870 |
| Scenario 3 - Deliver All 2030 schemes by End of Year 3 | £3.568 | £0.000 | -£19.000 | -£15.432 |
| Scenario 4 - Deliver All 2030 schemes by End of Year 2 | £9.633 | £0.000 | -£28.000 | -£18.367 |
| Scenario 5 - Deliver All 2030 schemes by End of Year 4 | £3.405 | £0.000 | -£9.490 | -£6.085 |

Table 3.8 below shows an alternative strategy where we accelerate delivery via the same range of scenarios as in **Table 3.7** but reduce the increased opex by assuming either all or a proportion of sites are mothballed until the formal compliance date. In the table below we have assumed an overall opex liability of 50% of the original to “Mothball but maintain” most of the sites. This is a non-viable option as it removes the benefit to customers of an accelerated programme (although it would address the supply chain concerns). The table shows we would remain in net penalty whatever option we select.

Table 3.8: Strategy 2- Programme Scenarios – Accelerate Delivery But Limit Opex to 50 % of original Opex i.e. mothball some sites-operate others

| SCENARIO For P Removal Time Incentive | AMP8 REWARD (£m) | AMP8 Penalty (£m) | Opex Reward (£m) | Net REWARD (£m) (-ve=Penalty) |
|---|------------------|-------------------|------------------|-------------------------------|
| Scenario 1- Programme According to EA Compliance Dates | £0.303 | -£11.20 | £0.000 | -£10.894 |
| Scenario 2 - Match TI Profile (Bring Forward 5 largest Schemes by 1 or 2 years) | £0.321 | -£0.091 | -£2.550 | -£2.320 |
| Scenario 3 - Deliver All 2030 schemes by End of Year 3 | £3.568 | £0.000 | -£9.500 | -£5.932 |
| Scenario 4 - Deliver All 2030 schemes by End of Year 2 | £9.633 | £0.000 | -£14.000 | -£4.367 |
| Scenario 5 - Deliver All 2030 schemes by End of Year 4 | £3.405 | £0.000 | -£4.745 | -£1.340 |

Table 3.9 below, shows a further alternative strategy where we propose in all scenarios, sites are built but all are mothballed until the 2030 compliance date. This will mean the benefits of the accelerated phosphorus removal schemes will not be realised for customers, and we assume a mothball and maintenance opex of 25%.

This Table shows that the only scenario that would give us a notional net reward, would be to build all sites by the end of Year 2 but not operate them until the end of AMP 8. This scenario is unviable and would create an unworkable front loaded and compressed programme that would deliver no benefit to customers.

Table 3.9: Strategy 3 - Programme Scenarios – Accelerate Delivery but Mothball and Maintain all sites with Opex at 25%.

| SCENARIO For P Removal Time Incentive | AMP8 REWARD (£m) | AMP8 Penalty (£m) | Opex Reward (£m) | Net REWARD (£m) (-ve=Penalty) |
|---|------------------|-------------------|------------------|-------------------------------|
| Scenario 1- Programme According to EA Compliance Dates | £0.303 | -£11.197 | £0.000 | -£10.894 |
| Scenario 2 - Match TI Profile (Bring Forward 5 largest Schemes by 1 or 2 years) | £0.321 | -£0.091 | -£1.275 | -£1.045 |
| Scenario 3 - Deliver All 2030 schemes by End of Year 3 | £3.568 | £0.000 | -£4.750 | -£1.182 |
| Scenario 4 - Deliver All 2030 schemes by End of Year 2 | £9.633 | £0.000 | -£7.000 | £2.633 |
| Scenario 5 - Deliver All 2030 schemes by End of Year 4 | £3.405 | £0.000 | -£2.373 | £1.033 |

These three tables above demonstrate that it is not possible to devise a viable delivery programme that will place us in reward under the current funding metrics of the Phosphorus Time Incentive Model. Currently the incentive is wholly punitive due to the increased opex liability versus a low reward level when a scheme is accelerated. If a delivery programme can be devised to meet the Time Incentive profile and incur zero penalty, then the reward still needs to be large enough to offset the increased opex outlay. We estimate that the ratio of Reward to Penalty would need to be 1:1 and the £/PE 5 times higher to offset the increased opex liability to meet the current profile.

As stated previously, we view the requirement to 'build *and* operate', under Ofwat's proposed delivery profile, as inappropriate. We are concerned this approach will place companies under penalty for simply reaching compliance requirements

As set out in section 0, we encourage Ofwat to consider either removal of delay penalties for those schemes where there is overlap with WINEP compliance. Alternatively, we propose that Ofwat should change the incentive mechanism to cover only build of assets, rather than building and operating of these. We also propose further adjustments to the funding mechanism to ensure the overperformance payments compensate for increased opex that is incurred due to early commissioning.

3.5 Concluding points

In conclusion, we have identified a number of material concerns and risks that emerge as a result of Ofwat's adjustments to delivery profiles. We have demonstrated how these changes can result in less efficient delivery of PCDs, disincentivise potential optimisation of solutions, and in some cases be undeliverable without incurring penalty. We also strongly encourage Ofwat to reconsider the application of a standardised delivery profile, coupled with delay penalties, for PCDs that are covered under alternative regulatory bodies.

4. Penalties Imposed on PCDs

4.1 Overview

Ofwat has proposed significant policy changes concerning the penalties in place for non-delivery or late delivery of PCDs. We have considered the real impact of Ofwat's proposed calculations for PCD penalties, and the level of risk companies will be exposed to. This is a particular concern when we consider the various instances in which delays may incur due to external factors beyond our control. In this section we detail our concern around the proposed potential increase in the delay penalty, and our particular concerns with applying these penalties to PCDs that:

- Are covered under other statutory obligations.
- Are linked to ODIs, and subsequent financial exposure under these.
- Are liable to be delayed due to circumstances beyond companies' control.

4.2 Changes requested

Do not implement the increase in penalties

We consider that Ofwat should not apply the proposed higher delay penalty rate of WACC + run-off rate and should retain the original approach of penalty rates based on WACC. Higher penalty rates are not warranted as companies are sufficiently incentivised through statutory regulatory compliance requirements and ODI underperformance penalties.

Remove delay penalties for PCDS that are covered by other statutory obligations

We consider it is inappropriate to apply an additional level of financial exposure and penalisation for schemes that are covered by other statutory obligations. This applies to storm overflows and phosphorous removal, both of which are covered under the EA's WINEP obligations. We consider that Ofwat should remove delay penalties, to avoid duplicating accountability and potential penalties for these schemes. We consider that non-delivery penalties will be sufficient to protect customers and ensure, where appropriate, funding is returned.

Remove delay penalties for metering due to ODI exposure

We consider that Ofwat should remove the delay penalty applied to the Metering PCD, on the basis that companies are facing considerable financial exposure under the ODI. We consider the ODI outputs sufficiently cover the appropriate outcomes of a Metering PCD, and that these adequately monitor that benefits are being delivered to customers. We discuss this in further detail in section 6.

Remove delay penalties for storm overflows

We have demonstrated the considerable risk of delays in this area as a result of factors over which Yorkshire Water have limited control. We ask that Ofwat do not apply delay penalties in such cases where companies can demonstrate the occurrence of such unforeseen factors, and subsequent delays to schemes.

4.3 Key arguments and evidence

4.3.1 Delay penalty rates

Ofwat is considering moving to a higher delay penalty rate, moving from WACC, to WACC plus run-off. This change would roughly double the penalty rate, and so double the delay penalties overall. Coupled with the difficult delivery profiles also proposed, PCDs now form an unjustifiable level of downside risk for companies, and the higher delay penalty would exacerbate this risk even further. Under a credible delay scenario, the higher penalty could increase our downside risk exposure by around £50m.

We are already strongly incentivised to deliver on PCDs as i) we already face potential enforcement actions through other regulatory enforcement bodies such as EA and DWI ii) other operational performance is often dependent on PCDs – e.g. mains renewals support performance on leakage, which in turn drives ODI performance. Applying large delay penalties to PCDs will in many instances mean companies are exposed to double or even triple penalty for certain deliverables. We have historically delivered large schemes, for example in WINEP or to comply with Drinking Water Inspectorate (DWI) requirements, without the need for PCDs.

There is now a disproportionate level of downside risk placed on companies through PCD delay penalties. A two year-delay on storm overflows, much of which could be for reasons beyond our control (detailed below), would now incur £140m of downside with greater penalty rates - bigger than any ODI in our current view, by some distance.

In the case of phosphorous removal, where the profile has been greatly changed from our submitted profile, we have calculated that, if we use Ofwat's methodology for counting Population Equivalent and complete all schemes per our obligation to WINEP timelines, we still face a £13.4m delay penalty.

We view it as inappropriate to be penalised by Ofwat to this scale, whilst being able to demonstrate full compliance with the EA's statutory obligations. We propose that removing delay penalties in these areas, whilst retaining non-delivery penalties is adequate protection of customer interest and monitoring of delivery, whilst not creating a double jeopardy.

4.3.2 Delay penalties applied where delays occur beyond Yorkshire Water's control

We appreciate the need to impose delay penalties to ensure companies are delivering improvements for their customers throughout the period. However, the proposed penalty rates and delivery profiles do not allow companies to manage the impact of delays due to factors outside of our control, and in some cases delay penalties will be unavoidable without changes. The storm overflows PCD is an area of expenditure that is subject to considerable delays due to factors over which Yorkshire Water has limited control. These factors include, but are not limited to:

- Land that falls within a conservation area – this results in planning permission required to complete any vegetation clearance, and it is not always guaranteed.
- Schemes that fall within a Site of Special Scientific Interest (SSSI) – when working within proximity of a SSSI, we need approval and consent from Natural England.
- Sites where other utility company assets are present, which may need relocating to allow work to take place or we impact access to any key sites.
- Sites where planning permission has already been granted for housing development.
- Certain landowners that have requested archaeological licenses for intrusive surveys e.g. National Trust.
- Sites where the identified land has been determined as unsuitable and as a result the design has had to change.
- Landowner safeguarding concerns mixed with access issues where livestock and construction interact.
- Requirement for planning permission in instances where temporary access is needed on a classified road.
- Trees with Tree Protection Orders (TPOs) requiring consent to remove.
- General landowner issues, not wanting to grant access for a variety of reasons e.g. development, compensation package offered, etc.
- Access issues where access is difficult or dangerous.

Given the complexity of these schemes, the significant delay penalties are too punitive. The list of factors presented above illustrates just some of the complex external factors that can lead to significant delays that impact Yorkshire Water Storm Overflow schemes. It is not in customers' interests to expose Yorkshire Water to financial penalties for risks it cannot control. We estimate that around 25% of schemes were delayed due to such factors in AMP7. Based on this, we estimate that if all schemes were delayed by 25%, per year. that we would incur a downside of £60m.

Similarly, the introduction of Time Incentives for the Supply PCD does not consider risks that occur typically in this enhancement area, over which Yorkshire Water have no control. Under this PCD, there are several schemes which require licenses or supporting assessments before commencement of delivery. For example, one of the schemes (R13 East Groundwater Option 2) is subject to abstraction licence application with the EA. The EA's application determination periods are set as four months but are commonly much longer than this. In such a case, reliance on the EA could create delays, and mean that companies incur delay penalties. Similarly, any scheme that is subject to planning where complex supporting assessments are required could be protracted or subject to delays (e.g. R3 Increase Moor Monkton is within flood risk zone 3 and is likely to require flood risk assessment supported by modelling).

There are also some schemes where delivery is dependent on delivery of alternative schemes of preparatory work. R13 East Groundwater Option 2 requires the siting, drilling and testing of boreholes. This is an uncertain process as it is dependent on whether the drilled borehole intercepts water bearing strata and it can require more boreholes to be drilled and test pumped before anticipated yields are obtained. Similarly, whilst the R91 East Ness to Huby WRMP scheme is a network enhancement scheme, it is reliant on the DWI scheme at East Ness again where a new borehole is required.

The Supply schemes PCD is subject to a tight delivery profile. We take all reasonable steps to reduce the risk of delay. We have sought to include schemes in transitional funding as 'early start schemes' so that all preparatory work and regulatory input is obtained before delivery. We are sufficiently incentivised to deliver in a timely fashion through other incentives and through the non-delivery backstop. We do not therefore consider the introduction of Time Incentives as a reasonable measure as this will penalise companies for delays that are beyond their control.

We consider Ofwat should include exemptions to penalties for schemes where such delays are demonstrable. We would be happy to work with Ofwat on developing a suitable form of words which can be applied to all companies.

4.3.3 For those PCDs where there are other statutory obligations, delay penalties should not be applied

In section 0, we addressed the concern surrounding schemes being faced with compliance obligations under both Ofwat and the EA, namely for storm overflows and phosphorous removal. Therefore, applying delay penalties for storm overflows and phosphorous removal is both unnecessary and creates a double jeopardy for companies. We propose removing the delay penalties from these two areas. Through our existing obligations we are still strongly incentivised to deliver these on time. Non-delivery of WINEP regulatory obligations will also cause significant reputational damage, as this will directly impact our EPA score. We feel the PCD non-delivery penalty set by Ofwat is a sufficient incentive to ensure benefits are realised for customers by the conclusion of the AMP.

4.4 Concluding Points

In conclusion, the proposed application of delay penalties to more PCDs, and potential increase in these delays, introduce significant financial risks that may undermine the ability of companies to deliver effectively for customers. These penalties are particularly problematic for those PCDs which are subject to other statutory obligations under the EA, for PCDs where there is significant financial exposure under ODIs, and for PCDs which are subject to delays beyond our control. We consider that such measures will not incentivise efficient delivery, but rather place companies under undue financial pressure. By retaining non-delivery penalties and allowing exemptions for justified delays, Ofwat can protect customer interests without imposing undue burdens on companies, ensuring a more balanced approach.

5. PCD Scope

5.1 Overview

We understand and support the need to have clear deliverables under each PCD to protect customers from companies receiving allowances for enhancement areas, and yet not delivering sufficient improvement for their customers, the community or the environment. However, in some instances Ofwat's request for specific deliverables undermines our ability to deliver meaningful outputs, which either differ from those set out in the draft determinations or are to be determined *during* the AMP period. Our two key areas for concern are the introduction of Base funding into scope of some PCDs, and Ofwat's proposal to limit delivery under the Mains Renewal PCD, to renewal of only condition grade 4 or 5 assets. We have further detailed these concerns in this section.

5.2 Changes requested

Base funding

PCDs should not be applied to base funding, due to the numerous existing incentives placed on this spend. Ofwat should remove base funding allowances from PCDs.

Mains renewals: asset condition grades

Ofwat has outlined, in its draft determinations, that only mains renewals completed on condition grade 4 or 5 assets will be considered towards compliance under this PCD. We believe this approach does not consider a more efficient approach of renewals completed on co-located assets which have significantly deteriorated. Ofwat's approach will not incentivise renewals on these mains which are similarly deteriorated, on the basis that they are not yet deemed condition grade 4. We therefore propose that Ofwat alter the scope of this PCD, to consider inclusion of condition grade 3 assets.

Net zero

We propose a PCD for our net zero enhancement and provide details in this section and in Annex 1. Our proposal is fully consistent with Ofwat's general approach to PCDs.

Living with Water

Ofwat has requested further details for a PCD for Living with Water, in order to provide customers appropriate protection. We have developed an outputs-based approach fully consistent with Ofwat's general approach to PCDs, and set out the details in section [5.2](#) and in [Annex 2](#).

5.3 Key arguments and evidence

5.3.1 Base funding

PCDs have been inappropriately applied to base funding in several areas. There are numerous mechanisms designed to ensure we spend our base funding appropriately, including the entirety of the outcomes regime. Linking PCDs to base funding is duplicative and an unnecessary additional complexity in an already very complex regime. Base funding should be removed from the scope of PCDs.

The price control is structured to incentivise companies to spend base allowances effectively and efficiently. ODI underperformance penalties and statutory compliance requirements additionally incentivise companies to deliver against our obligations. The price control structure provides sufficient incentivisation around the efficient use of base funding, while also allowing companies the scope to innovate in their approach to delivering the outcomes customers want and need. The application of PCDs to base funding undermines the principles of the price control structure.

In the methodology for the PR24 price control, Ofwat outlined the principles underpinning PCDs and specified that PCDs should be applied where material enhancement expenditure is not linked to or fully protected by PCs. The application of PCDs to base funding fundamentally goes against these principles, and is not sufficiently justified by Ofwat, particularly in cases where spend is directly linked to PCs. We propose that the mains renewal PCD excludes the activity delivered through base funding.

5.3.2 Mains renewals: Excluding condition Grade 3 assets is an inefficient approach

In its draft determinations, Ofwat have stated that only mains renewal activity undertaken on those assets that are classified as condition grades 4 or 5 will count toward compliance under this PCD. Whilst we are supportive of this incentivisation of the renewal of the poorest condition assets, to deliver the renewal programme efficiently and achieve a challenging cost-efficient unit rate, we believe that Ofwat should include mains renewals on assets in condition grades 3, 4 and 5 in the scope for this PCD. Excluding renewal of these lower condition grade assets is an inefficient approach to delivery of this PCD. Under this approach, companies, when completing works in an area, will be disincentivised to renew pipes that have been laid at the same time, by the same resource partner, on the basis that they have not yet reached ‘grade 4’ condition. Mains currently in condition grade 3 are likely to deteriorate to grade 4 or 5 within the next 10 years. Therefore, it is more efficient to renew them alongside the grade 4 and 5 mains now, avoiding the need to disrupt customers and potentially dig up the highway a second time.

We have provided the breakdown of our asset conditions below. Whilst we agree with the need to prioritise Grade 4 and 5 assets, we are concerned that the exclusion of all other assets will be a higher cost, less efficient approach. Currently we have 17% Grade 3 assets. These are assets that may have been laid at the same time as Grade 4 assets, by the same partner, and be of similar condition but have not yet burst. This is a significant number of assets that will be at risk of further degrading if not renewed in this AMP. Being able to address these assets is vital to ensure an enduring, reliable network and delivering an efficient mains renewal programme.

Table 5.1: Breakdown of Condition Grades of Mains Assets

| Company | PR Period | Company + PR | Gr1 | Gr2 | Gr3 | Gr4 | Gr5 | % 4&5s |
|---------|-----------|--------------|--------|--------|--------|-------|-------|--------|
| YKY | PR24 | YKY24 | 46.20% | 28.40% | 17.10% | 6.60% | 1.70% | 8.30% |

For mains renewals funded through base, we consider there should be no restrictions on the condition grade. This improves our flexibility to deliver efficiently. Excluding base funded renewals from the PCD as we propose above, means that the PCD definitional change can be limited to including condition grade 3 only.

If the PCD scope continues to encompass *all* of our mains renewals activity, then the definition should be broadened to all condition grades. This allows us a level of flexibility in delivery. In general, we will always prioritise renewals for the worst condition and highest risk assets. As part of this it is sometimes possible to efficiently renew lower risk assets ahead of them degrading to a point that service is impacted. Therefore, the PCD allowing all condition grades to be counted towards the PCD would be our preference.

5.3.3 Net zero

We have reviewed our forecast enhancement totex and found that it does not meet the 1% materiality threshold for PCDW18 or PCDWW34. However, we acknowledge there is no regulatory oversight of the implementation of our GHG reduction programme. Accordingly, we propose to implement a price control deliverable (PCD) to protect customers from non-delivery of our various schemes.

For information on the methodology, we have used and the central assumptions we have applied for our PCDs please see **section 8.2 in Introduction to enhancement cases**, in our business plan. Details of the PCD design and values are included as an annex to this PCD response document.

5.3.4 Living with Water

More specificity in what we will deliver through our Living with Water programme was requested by Ofwat. In response, we propose a PCD that focuses on area managed through SuDS or disconnected from the combined network.

The draft determination substantially reduced our funding in this area. If the final determination is unchanged in the amount of funding provided, then we can deliver 6.1 hectares of **land managed** over the AMP. This will be our PCD.

If Ofwat accepts our proposal for the full funding as proposed in our business plan, we will deliver 10.5 hectares **disconnected from the combined network**. This will be our PCD.

We provide further details in the formal definition (**Annex 2**) and in the enhancement case for this area of activity.

We propose this is an end of AMP delivery PCD, with non-delivery returned on a unit cost basis. We do not include a formal delivery profile within the period. This is because the nature of the work within this PCD is highly dependent on partnership funding, the timing of which is very difficult to predict and is reliant upon national programming of Flood Defence Grant in Aid which is updated annually. An end of AMP target gives us flexibility and allows for the timing of funding from external partners to vary. The nature of our funding arrangements with external parties also provides an additional cost efficiency check on our work.

We note Ofwat's concern on the incentivisation of green/blue improvements. The nature of this delivery means it is not possible to guarantee a specific volume of such work. However, we are signed up to the principles of green and blue being the priority within a hierarchy of intervention.

For the avoidance of doubt, we will not count any of the AMP8 investment relating to this area of enhancement towards our AMP7 commitments for the Living with Water bespoke PC.

We would actively like to discuss and engage with Ofwat on any updates needed to the PCD given the innovative approach and unique nature of managing flood risk in partnership at a catchment scale.

5.4 Concluding points

In summary, while we recognise the importance of clearly defined PCDs to ensure companies deliver tangible benefits for customers, the environment, and the community, certain aspects of Ofwat's proposed approach risk undermining our ability to do so efficiently. Specifically, the inclusion of base funding within the scope of PCDs adds unnecessary complexity to PCDs. We propose that the mains renewal PCD excludes the activity delivered through base funding.

The restriction of the mains renewal PCD to only condition grade 4 and 5 assets disregards opportunities for more efficient asset management. Expanding the scope to include condition grade 3 assets would enable a more strategic and cost-effective approach, reducing future disruption and ensuring long-term resilience. We believe Ofwat should reconsider these elements to better align these PCDs with both efficiency and long-term network sustainability.

6. Metering

6.1 Overview

The delivery profiles and outcomes for the metering PCD have been adjusted significantly in Ofwat's draft determination. Smart metering is an integral part of our business plan and while we recognise the need for and value of this PCD, we want to ensure that it allows us to deliver this programme of work effectively.

Some of Ofwat's changes proposed in the draft determination are cause for concern, particularly the introduction of a 95% operability target for meters as a measure of compliance. We believe there are practical challenges in meeting this target under the current proposals which we have detailed in this section. Additionally, we believe that certain aspect of this PCD, such as meter relocations, may be ill-suited to a PCD mechanism.

In this section, we have therefore addressed, in detail, the following key concerns; i) Ofwat's proposed 95% operability requirement, ii) the implications of additional third-party assurance for this PCD, iii) the complexities of demonstrating compliance within the current PCD scope, iv) the inclusion of meter relocations in this PCD, and v) the implications of additional third-party assurance for this PCD. We also propose that Ofwat should remove the delay penalty for this PCD, on account of the financial exposure under the ODIs.

6.2 Changes requested

Remove Operability Requirement

As previously stated, we consider that Ofwat should remove the focus on operability and instead focus on asset installation. This is because the ODIs that focus on reducing leakage and demand already provide a strong incentive for the meters to operate reliably. We have set out the detail of the potential financial exposure for Yorkshire Water should we fail to deliver sufficiently operable meters if the PCD and ODIs are both in place. In addition, the level proposed for the operability requirement is unreasonably high – beyond that achieved in the much more mature energy market, and beyond that needed to deliver the benefits associated with meters.

We believe Ofwat should focus on outcomes related to leakage and demand. As these outcomes are covered in the ODI, we propose that Ofwat remove additional requirements and focus the PCD solely on deployment of assets.

Remove requirement for third party assurance

As part of this requirement, Ofwat has invited recommendations for a means of assuring operability and proposed the use of a third party to issue assurance. We are concerned that this will incur further additional costs that have not already been factored into the allowance. We note that assurance already occurs through external parties as part of the Annual Performance Reporting (APR) process, and we believe that this assurance should be utilised for this PCD. This would achieve an appropriate level of assurance without adding substantial additional costs.

Alter scope for metering non-delivery penalties

We recommend an alternative PCD scope, using similar rates, for deployment of meters only. For metering non-delivery, we would recommend applying the same non-delivery rates but ensure that this only applies to deployment of meters only, removing operability and continuous reporting from scope because we are already incentivised to deliver good outcomes through lower leakage and demand.

This alternative PCD should be based on the representations made by Yorkshire Water and the broader sector regarding the percentage of successful exchanges, with appropriate funding linked to costs related to meter relocation.

Ofwat should consider that water companies may incur abortive costs when multiple attempts to exchange a meter fail due to factors beyond their control, such as customer no-shows or lack of access. Therefore, recovering the full cost of the meter exchange is inappropriate. If such instances are documented and evidenced by the company, a non-delivery penalty should not be

applied.

6.3 Key argument and rationale: metering operability

N.B. This section should be viewed in conjunction with the **smart metering enhancement case** which considers the financial requirements if Ofwat proceed with their proposals at draft determination.

6.3.1 Requirement for 95% of data packets delivered is not appropriate

We understand the rationale of Ofwat in their proposal to include an operability requirement for this PCD, to ensure meters are installed, and functional, and to ensure the benefit is realised by customers. However, we feel that an ongoing requirement for 95% of data packets delivered for an asset to be classed as installed is an inappropriate measure for this PCD. We have set out the key reasons for our concern below:

This approach does not incentivise the right outputs

We consider that the PCD for metering replacement should be focused on the installation of the right number of meters, rather than being focussed on operability of assets. The performance benefits of meter installation are already incentivised through ODIs, and therefore an additional requirement on the PCD is unnecessary. Most of the costs within a metering programme are costs associated with procuring the meters and installing the meters, >£150 on average to procure and install a meter, compared to the cost of receiving the data <£2 per meter per year. As such it appears too punitive to attribute such a high focus and financial consequence to achieving a % data connectivity, when the costs for connectivity are a minority factor within Yorkshire Water's overall Smart metering programme costs.

Furthermore, we have seen success in delivering the outcomes of improvements to leakage and demand, whilst operating at much lower data completeness. Yorkshire Water has an early maturity network coverage for smart meters supporting new developments and Domestic Metered Optants since 2023. Given the network's early-stage maturity, assets are currently operating at 72%, a figure we determined using a similar data point success rate calculation as that proposed by Ofwat. However, even at this level of operability, Yorkshire Water have been able to successfully determine continuous flow and work with customers to resolve the leakage or water waste. This emerging continuous flow resolution success rate has resulted in ~0.7 MLD of leakage benefit with Yorkshire Water supporting customers to fix continuous flow at a 56% success rate. This demand reduction outcome is not significantly hampered by the levels of data success due to mature analytics which have been developed. Improving our success rate here is a focus for YW customer processes and digital experience and is not related to the completeness of meter data.

The primary goal of our metering schemes should be to reduce demand and leakages to ensure a better experience for our customers. We have demonstrated that a focus on operability does not adequately monitor these outcomes. We view this to be an arbitrary measure that will increase costs driven by the need to renegotiate existing contracts and KPIs with vendors, potentially undertake a new tender process, and determine new means of data capturing and third-party assurances.

We are already subject to penalties under ODI commitments

In the case of the metering PCD, Yorkshire Water believes the exposure from not installing or not achieving the Ofwat proposed ODI for connectivity is sufficient to protect customers from under delivery of the Smart Metering programme. The outcomes set out in this ODI fully cover the desired outputs of improvements made to our metering network.

Failure to deliver on our metering commitments, will also result in failure to deliver on our associated ODI outcomes relating to reduction of leakage, PCC, and reduction in demand. Our exposure under relevant ODIs totals £21m. On this basis, the correct application of the

methodology is to not set a delay penalty. Our methodology for calculating the impact of metering on these PCs is consistent with industry standard techniques and assumptions, and we are confident in the level of exposure we face under this ODI.

Table 6.1: Financial exposure under relevant ODIs

| Outcome | Total benefit | AMP8 benefit | ODI at risk in AMP8 (£m) |
|--------------|------------------|------------------|--------------------------|
| Leakage | 8.46 MLD | 7.73 MLD | 16.25 |
| PCC | 2.474 L/P/D | 2.000 L/P/D | 4.17 |
| NDD Demand | 4.94 MLD | 4.04 MLD | 1.03 |
| TOTAL | 26.76 MLD | 22.57 MLD | 21.45 |

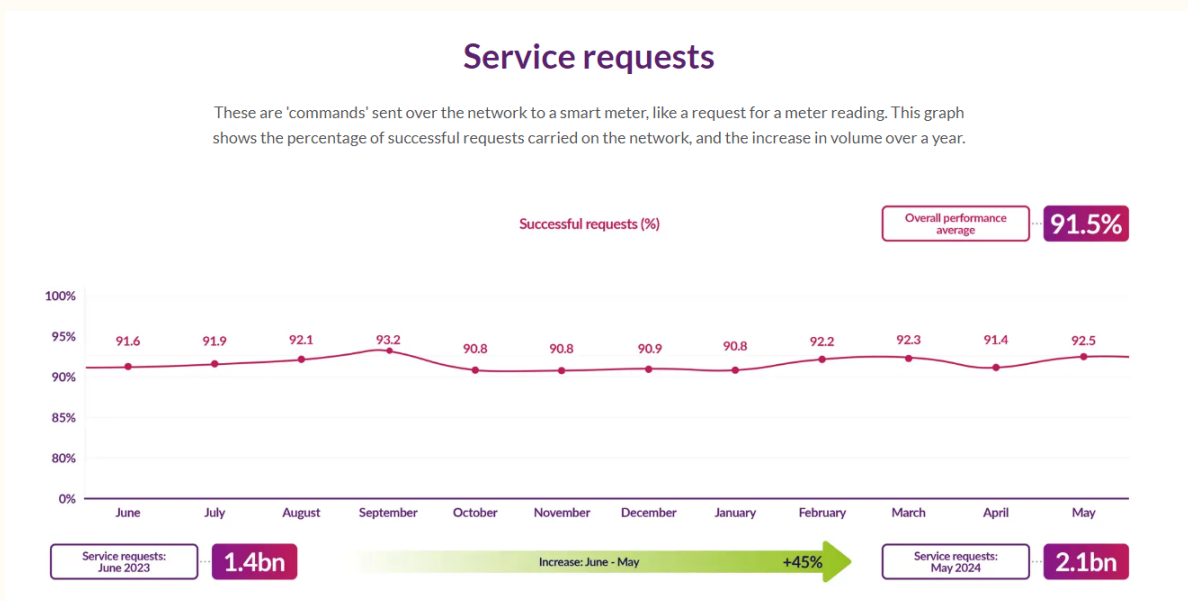
Under the current PCD, we are subject to £3.8m in delay penalties, assuming delays of 15% of schemes per year in period. The combined financial exposure under the ODI and PCD are disproportionate to the scheme, and place Yorkshire Water at considerable risk.

95% is an unrealistic operability target

If Ofwat decides to proceed on the measure of connectivity to achieve compliance, we believe that 95% is an unrealistic target. It is a far higher standard than the gas or electric meters provide, despite that being a more mature market with more common standards (SMETS 1 & 2 protocol). This is demonstrable when we benchmark it against comparable infrastructure, namely gas and electric meters. This programme has been underway for a number of years and has a number of advantages over water which assists data completeness given:

- The general above ground location of gas and electric meters, generally not below metal chamber lids, subject to silt and flooding or extremes of temperature as in the case in water networks.
- The location of gas and electric meters tend to be less impacted by third parties or events. Water meters being in the highway, footpath or driveway will have challenges above the level of gas and electric, such as parked cars, resurfacing or third parties accessing the chamber.
- The gas and electric solution is a powered connection, meaning battery protection is not required to ensure a given asset life of 15 years, allowing for a higher power solution to send data packets ensuring a higher success rate.

Figure 6.1: Breakdown of performance of SMETS assets



Despite these three major differences in challenge between gas, electric and water, the SMETS programme to date is only achieving a 91.5% success rate on average⁴. Please note, data success rate is determined as having successfully communicated data within the last 1-month period. This is due to the gas and electric meters archiving up to a month of data at a time in memory and being able to backfill data up to a month old. This is facilitated by the mains - powered solution enabling storage and transmission of larger data packages. On a like-for-like comparison of achieving daily data without this inbuilt powered solution, data redundancy gas and electric likely achieve a far lower data success rate. This clearly shows that the current 95% success rate is not appropriate.

We strongly support removing this metric. However, in extremis, if any data completeness measure is required, it should include two items:

1. An allowance for meters which are located in radio communication dead spots, acknowledging that a percentage of meters will not reliably join the IOT network.
2. An accommodation for real-world radio planning challenges, such as flooded chambers, maintenance response times and potential for customer tampering.

As such, any applied percentage completeness measure should be significantly lower than proposed. Especially when Yorkshire Water has evidenced that 72% data completeness currently enables the main benefits of smart metering to be realised. Aligning the requirements to the benefits avoids unnecessary spend on a standard which is both unachievable and unnecessary.

We have already tendered costs for this project and have not built this new requirement into our contractual mechanisms

Yorkshire Water launched the Utility Contracts Regulations (UCR) process supporting the delivery of 1.3 million meter exchanges on 2 October 2023. This process started with over 100 suppliers and resulted in the selection of a supplier in May 2024. This process was based on the information available to allow for award, and suitable business readiness activity to deliver a successful programme starting in April 2024. There were no suggestions of a data success rate standard from Ofwat whilst building the PR24 submission nor in the intervening time until draft determination.

The change in data standards to achieve the IOT network density and coverage, would fundamentally require the voiding of the existing process and a new process to be run. The costing for Data as a Service would also be fundamentally different, with the potential for taking a different approach to hardware solutions to achieve the outcome. These changes would significantly increase the costs, not only of Yorkshire Water's submission, but also the rest of the sector as well. Analysis completed with our incumbent smart metering radiocommunication network provider Netmore has concluded that, depending on the density of the properties in scope, the increase in cost to achieve the standard proposed by Ofwat ranges from around 2.1 to over 4 times the cost for companies. For Yorkshire Water this will cost an estimate of around 3.5 times the cost for the work under AMP8 scope.

Incompatibility with existing data packets

The data packet regime which Yorkshire Water has developed to support the key outcomes for water demand management: customer-side leakage, DMA water balance, PCC, business demand and customer experience. The data packet regime does not capture 24 hourly data packets as suggested by Ofwat. It captures 21 hourly data packets followed by a regime of nine 15-minute data packets, with a differing regime of data packet redundancy and transmission. In order to allow for the data packets to capture operability as per Ofwat's requirement, the

⁴ As per the smart DCC website <https://www.smartdcc.co.uk/our-smart-network/network-data-dashboard/performance/>

engineering of the data packet transmission regime would need to be changed. This would have two potential impacts;

1. This could have considerable impacts on the battery life – initial modelling suggests the increase frequency of data packets could reduce battery life by up to 2 years, creating a higher cost to customers as meter replacement cycles would be reduced from the planned 15-year cycle. Yorkshire Water has created detailed analytics for the 70,000 smart meters installed using the existing data regimes. An additional cost would be incurred to change this analytics programme to be compatible with any new data packet regimes to align with Ofwat's requirements.
2. Additionally, the data reporting requirement is problematic, as by the time of APR reporting not enough time will have elapsed to satisfy the data connectivity completeness element of the PCD. Overall, it would be unfair to judge meters installed in February and March, as such the reporting mechanism is flawed and would result in excessive and elaborate reporting requirements.

We are concerned about the need to get third party assurance

The APR process is an established mechanism for reporting delivery of programmes of activity and service level outcomes. Yorkshire Water believe the smart metering advisory group should be used to agree a reporting standard for data success rate, to establish comparative measures and methodology for reporting the level of success for different companies and technology types. We do not support the need for the appointment of an independent 3rd party auditor outside of the APR reporting assurance process, at additional cost to the delivery of the smart metering programme.

If Ofwat continue with operability %, companies will be unduly penalised by non-delivery penalty

Of the costs incurred by the water company to install a water meter, most of the cost is associated with the cost of the meter hardware and the cost associated with visiting and installing the meter at the property. Depending on the method of deducting costs, this could amount to 87% of the whole life cost of the meter assuming 15-year asset life, being associated with installing the hardware. Given that water companies could incur all the capital costs of installing 100% of the install programme, it does not seem appropriate to recover such a high cost from the water company based on a data success rate which may be impacted by events occurring after the installation of the meter has been successfully completed.

6.4 Key argument and rationale: other concerns

6.4.1 Metering: PCDs being published post cost submission, doesn't allow for accurate delivery costs to be submitted

Ofwat publishing a PCD for metering without prior consultation of water companies is problematic. Water companies are required to build cost models without a known set of PCD requirements which have significant financial impact. Yorkshire Water recommend that Ofwat publish a final PCD mechanism as soon as possible after reviewing the water companies' PCD representation cases and allow for water companies to resubmit their metering programme costs. This will allow companies' plans to be compared on a like-for-like basis, using a common set of constraints and outcomes within the final Ofwat PCD structure. Not taking this approach will undermine any modelled costing approach as companies will assume different PCD structures for final determination and include different cost modelling to satisfy the outcome.

6.4.2 Metering: PCDs for all meters is problematic, as full costs are not considered

To deliver all meters within the smart metering programme, as proposed currently under this PCD, presents a challenge. Our analysis shows that 6% of meters within the Yorkshire Water programme may not be possible to locate for a range of reasons, including pavement and road resurfacing, customers building over the assets, and assets which we can no longer access without unacceptable impact to customers due to internal fittings. During the rollout programme

this number will most likely increase with knowledge shared from more mature smart meter rollout programmes indicating >10% of meters will require relocating. The cost of meters being relocated to achieve a 100% programme delivery of connected working meters is significantly higher than the cost of an exchange. Our analysis demonstrates that the PCD is not deliverable for 100% of meters being exchanged at the cost modelled by Ofwat. The current regime will not incentivise companies to undertake this important relocation work, which will deliver significant improvements to customer service and water demand reduction. This will disproportionately impact the NHH retail market as smaller meters will be prioritised over costly larger meters to satisfy the PCD within the funding constraint. This might incentivise companies to target their efforts at simple meter upgrades and replacements, avoiding more complex but more impactful larger meter replacements and upgrades.

6.5 Concluding points

In this section, we have outlined our concerns regarding the scope and defined deliverables under the metering PCD. We strongly believe Ofwat should consider revisions to this PCD, specifically the removal of the 95% operability requirement and the associated third-party assurance requirement. We also believe Ofwat should reassess the scope of this PCD and to acknowledge the complexity of certain delivery aspects, such as meter relocation, which we believe should not be included under this PCD. As set out in section 0, we also propose removing the delay penalty for this PCD, due to duplication with ODI penalties.

7. Clarifications

7.1 Overview

In our review of the draft determinations, we have noticed some discrepancies in our understanding of deliverables and subsequent figures, compared with how they have been presented by Ofwat. Most critical of these is the deliverables under PCDs. We are seeking to understand these discrepancies to ensure that should there have been an erroneous duplication, we can clarify the outputs required of us to fulfil our enhancement commitments in this period. Additionally, Ofwat have made suggestions of additional mechanisms which would balance risks, for which we seek further clarification, and encourage further consideration.

7.2 Changes/ clarifications requested

Further consideration of +/-20% output threshold for application of penalties

We are supportive of a threshold providing some delivery flexibility and consider 20% a plausible value. This would give protection to customers from our delivering early due to an element of ‘good luck’ such as favourable circumstances. It also provides a level of protection for delays beyond our control. It also gives us some scope to optimise our delivery profile as we get into detailed planning, enabling us to deliver as efficiently as possible and in the best interests of customers.

Large portfolios of schemes will always attract some level of delay. Every project has a residual risk, even with excellent risk mitigation, and with a large portfolio some of these risks will be inevitably realised. A 20% threshold provides a level of practical mitigation for delays and gives a simple mechanism that avoids a large administrative burden on Ofwat or companies.

Our understanding is that this threshold is relevant for in-period delays, though we would welcome Ofwat clarifying exactly how this would work in practice.

Further consideration of AMP9 ‘grace period’

We believe Ofwat should further consider the benefits of a mechanism to remove the need for companies to reapply for funding for schemes on track to be delivered early into the AMP9 period. We ask Ofwat to consider the unforeseen circumstances that can occur and consider a flexible approach that allows for projects to be delivered within the first year of AMP9 without requiring reapplication. We recommend Ofwat apply this ‘grace period’ mechanism and remove non-delivery penalties for schemes delivered within the first 6 months of AMP 9. This will allow for the unavoidable delays that can occur, particularly in the case of schemes with such large portfolios. We also ask that Ofwat consider, separately, ad-hoc exemptions in instances where companies can demonstrate material factors beyond their control that would not therefore warrant penalisation.

Metering duplication

As stated, Yorkshire Water have a combined solution of renewing/ upgrading meters. Ofwat have misrepresented these deliverables in their outputs table by duplicating this as two separate solutions. We believe Ofwat should remove this duplication and apply the appropriate penalty rate.

Table 7.1: Draft Determinations - Ofwat’s Proposed Deliverables for Metering PCD

| <i>PCD outputs (cumulative)</i> | <i>Unit</i> | <i>2023-24</i> | <i>2024-25</i> | <i>2025-26</i> | <i>2026-27</i> | <i>2027-28</i> | <i>2028-29</i> | <i>2029-30</i> |
|---------------------------------|-------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| New installations | nr | 0 | 0 | 25,500 | 51,000 | 76,500 | 102,000 | 127,500 |
| Meter upgrades | nr | 0 | 0 | 138,781 | 485,435 | 832,089 | 1,178,743 | 1,386,815 |
| Meter Replacements | nr | 0 | 0 | 138,781 | 485,435 | 832,089 | 1,178,743 | 1,386,815 |

Phosphorous removal schemes

We believe that Ofwat should remove the non-applicable schemes, listed under Table 7.3 Table 7.3: Non Applicable Phosphorous Removal Schemes Table in section 7.3 from scope of this PCD, as these schemes pertain to activities around the securing of permits, and are do not require the same level of funding.

Bioresources

We believe that Ofwat should consider removal of sites that are due for delivery beyond this AMP cycle and include only those schemes that are in scope for the AMP 8 cycle only.

7.3 Key clarifications

7.3.1 Further consideration of AMP9 'grace period'

In their draft determinations, Ofwat have proposed withholding the non-delivery penalty for PCDs which can be demonstrated to be due for delivery early within the following AMP. We believe Ofwat should further consider this policy and provide further detail in the final determinations. We agree that reapplication for funding for schemes that are on track to be delivered early in AMP9 is an unnecessary process, that unduly increases pressure on companies. Furthermore, risk of being unable to recover such funds may perversely incentivise companies to hold off on further spend, to mitigate the potential risk that funds may not be able to be recovered in the next AMP. Such a mechanism, therefore, would allow for continuous work and improvements to be delivered for customers. We view that this mechanism should be flexible and dynamic and allow for delays of PCDs which have occurred because of unforeseen circumstances.

7.3.2 Storm overflows re-aggregation

Changes in our internal direction in response to the draft determinations, have prompted Yorkshire Water to alter the aggregation of the Storm Overflow plan and hence this will impact the PCD. We now propose that this PCD covers our core statutory plan, containing all the previous WINEP elements (including accelerated schemes) and additional SOAF expenditure and statutory DPC schemes which have been removed from this mechanism. We then propose a second additional plan which uses non-WINEP, non-statutory allowance that was allocated to bathing water to address discharge reduction in AMP8.

For the storm overflow optimised discharge plan, we have undertaken a high-level assessment of our DWMP24 outcomes within the representation period but have been unable to undertake any asset-specific analysis. Once we undertake ground investigations and review site specifics then it may become apparent that we are unable to proceed with the scheme in the timescales proposed, so we need flexibility to be able to substitute schemes within this part of our plan. This will also mean that the volumes stored could change, and therefore, the current form of the proposed storm overflow PCD would not be suitable. We therefore suggest that a suitable programme level DPC would be more appropriate to ensure that customers receive the service that we are committing to deliver through the optimised discharge plan component of our plan.

We have provided Ofwat with a discrete version of the ADD20 table for the overflows in the optimised discharge plan and acknowledge that only OUT5 recognises the benefits driven by these schemes.

i) Direct procurement for customers (DPC)

Ofwat has advised that storm overflows should not be progressed via the DPC mechanism. As such, we have had to make changes to the schemes that are included in the scope of this PCD. As a result of this change, costs have been added back into our AMP8 plan for six sites (two of which have been subsequently moved out as non-WINEP from the statutory plan) A number of sites detailed for AMP9 start and AMP10 delivery have also moved back into the LTDS tables as these had an assumed DPC delivery route.

ii) SOAF additions

The EA has stated that we need to deliver cost-beneficial solutions from our SOAF (Storm Overflow Assessment Framework) outcomes U_INV activities from AMP7 in AMP8. The SOAF programme was established for PR19 and investigates storm overflows in line with the EA guidance linked to river water quality and the impacts of the storm overflow on the water

quality. The additional SOAF schemes have a delivery date of 31 March 2028 and are listed in Table 7.2 below.

Table 7.2: SOAF schemes originally included in the PR24 plan and those added to the draft determination response

| SOAFs in existing PR24 | Additional SOAFs to be added at DDR |
|----------------------------------|---|
| YWS00209 Tadcaster Britannia CSO | YWS01495 Pole Moor CSO |
| YWS00280 Tadcaster East CSO | YWS00538 Carrhouse Lane Cayton CSO |
| YWS01593 Vickers Road CSO | YWS01207 Wyke Beck CSO |
| YWS01773 Dark Lane CSO | YWS01765 Corn Mill Lane No2 CSO |
| YWS01569 Bobbinmill Lane CSO | YWS01639 Wheldon Road CSO |
| YWS01413 Fraser Drive CSO | |
| YWS01172 Rivelin Valley NO 3 CSO | YWS00605 Runswick Beck CSO* (new WINEP – was in additional coastal ambition in PR24) |
| YWS00897 Syke Lane CSO | |
| YWS00188 Draughton Priors Lane | |

Through the AMP7 WINEP, we were funded to carry out 158 SOAF investigations across AMP7. We have currently completed 102 SOAF assessments and have identified 15 cost-beneficial storm overflows (at 8 August 2024) as per the SOAF process under U_INV. Nine of the SOAF cost-beneficial solutions were already included in our WINEP and Storm Overflow Enhancement case, with a further one cost-beneficial solution included in our PR24 plan under the coastal enhancement case.

We have added the five new cost-beneficial SOAF outcomes and one coastal storm overflow cost-beneficial SOAF to our WINEP submission to the EA. The solutions have been designed and costed in the same way as the other outcomes within the storm overflow WINEP and we will be progressing these cost-beneficial SOAF outcomes to meet the U_IMP4 and ENVACT_IMP3, 4 & 5 drivers.

Alongside the named outcomes for SOAFs and subsequent investment there is an additional EA requirement to be able to invest in any cost-beneficial solutions that may arise from the remaining SOAF investigations. We have 56 AMP7 SOAF investigations to complete and we have calculated a lump sum value based on costs of the additional cost-beneficial SOAF schemes and included this within our PR24 plan to enable us to deliver our statutory U_IMP cost-beneficial improvements in AMP8. The programme of AMP7 SOAF completion will run to the end of AMP7, due to factors outside Yorkshire Water’s control. We consider this is the most appropriate process to ensure we have the required funding to deliver these statutory requirements. We will be progressing these cost-beneficial SOAF outcomes to meet the U_IMP4 and ENVACT_IMP3 and 4 & 5 drivers.

7.3.3 Metering duplication deliverables

Ofwat has simplified the outcomes to be related to either replacements or upgrades. In the submission this was separated into schemes. As part of this simplification, Ofwat has duplicated the outcomes for replacements and upgrades, which in our delivery plan are the same solution. As such, the delay or non-delivery payment will be duplicated, which incurs a material financial risk. Additionally, the non-delivery penalty rate proposed will exceed the maximum cost per unit of installation of each unit, making it punitive rather than a cost-recovery mechanism.

7.3.4 Phosphorous removal schemes

The total of funding in scope of the PCD for phosphorous removal, provided by Ofwat, does not equal the sum of the cost of schemes listed. We believe this may be as Ofwat have utilised the population equivalent provided from the Stata forecast data set, and have included PCDs that we listed as N/A, as listed below:

Table 7.3: Non Applicable Phosphorous Removal Schemes

| | |
|-----------------|-------------|
| THORP ARCH/STW | 08YW100036a |
| LEEMING BAR/STW | 08YW100037a |
| WETHERBY/STW | 08YW100045a |
| HUNMANBY/STW | 08YW102029a |
| NAFFERTON/STW | 08YW102038a |

The sites listed above should not be included in the PCD, as the requirements to achieve the outcome at the listed sites are around securing appropriate permits and have a significantly lower cost implications.

7.3.5 Bioresources Industrial Emissions Directive

Under the PCD for Bioresources (IED), companies are expected to deliver specific sites listed as requiring IED improvement works. Ofwat has named sites which have been identified for delivery in the year 2034/35 and would therefore seem out of scope for the AMP 8 cycle.

7.4 Concluding points

In this section, we have highlighted several key areas where clarification and further consideration are necessary. Addressing these points will ensure alignment between our deliverables and Ofwat's expectations, helping to avoid discrepancies that could lead to duplication, undue penalties, or misaligned incentives. We welcome further engagement from Ofwat to resolve these issues and to agree on a clear and practical path forward that accurately reflects the complexity of our projects and allows for efficient delivery within the current and upcoming AMP cycles.

Annex 1: Net Zero PCD

For information on the methodology that we have deployed, and the central assumptions we have applied, please see **section 8.2 in Introduction to enhancement cases** in our business plan.

| PCD Delivery Expectation Description | |
|--------------------------------------|--|
| Description | <p>Reducing greenhouse gas emissions by targeting process emission reduction. Process emissions are gases produced from treating wastewater and sewage sludge and include nitrous oxide and methane both with high global warming potential far greater than carbon dioxide. The company is investing in:</p> <ul style="list-style-type: none"> • 9 schemes to reduce methane process emissions, by upgrading 9 STWs (sites). • 13 schemes to reduce nitrous oxide process emissions, by upgrading 13 STWs (sites). <p>Methane and nitrous oxide are targeted because these are key GHG emissions with significant global warming potential, associated with wastewater processes and contribute more than 40% of total wastewater emissions.</p> <p>As scope 1 emissions these are under our direct control, and addressing these emissions is a priority to align to a net zero glide path.</p> |
| Output measurement and reporting | <p>Company must deliver the outputs in line with the profile specified in the 'forecast deliverables' table. Company should report outputs annually in parallel with the APR (Annual Performance Report). This information should be split by;</p> <ol style="list-style-type: none"> 1. Methane reduction schemes vacuum degassing only completed. 2. Nitrous oxide reduction schemes completed. |
| Assurance | <p>The company must commission an independent, third-party assurer, with a duty of care to Ofwat, to assure, to our satisfaction, that the conditions below have been met and the outputs of the scheme set out below have been delivered.</p> |
| Conditions on Scheme | <p>The pace of technological change for emission reduction technologies is rapid. Therefore, the company can substitute scheme solutions where it can achieve equal to or greater GHG emission reduction than the forecast benefits.</p> |

We propose a series of deliverables to reflect the differences in activities under our proposed net zero enhancement funding. We have set out our delivery profile based on the phasing of investment and the implementation plan anticipated across the AMP. Work will commence in all areas in Year 1, however it is likely that completion will commence from Year 2 onwards.

| Deliverable | Unit | Forecast Deliverables | | | | |
|--|---------------------------|-----------------------|---------|---------|---------|---------|
| | | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 |
| Methane reduction (vacuum degassing only) | No. Schemes (cumulative). | 0 | 2 | 9 | 9 | 9 |
| Nitrous oxide reduction | No. Schemes (cumulative). | 0 | 4 | 8 | 12 | 13 |

We propose the PCD protects all totex in this enhancement case, including the costs for monitoring of the baseline and post scheme installation process emissions. This will be key to ensuring that the reductions can be validated and reported on an on-going basis. The different PCD rates reflect that there is a degree of variability across both the methane and nitrous oxide investments.

Proposed PCD non-delivery payment rates.

As set out in our business plan the proposed payments rates as follows:

| Deliverable | | Capex Payment (£m) | tCO2e reduction/year (from full operation) |
|--|---------------|-------------------------|--|
| Methane reduction (vacuum degassing only) | £m per scheme | Knostrop – 1.64 | 3664 |
| | | Blackburn Meadow – 1.49 | 1733 |
| | | Esholt – 0.95 | 2580 |
| | | Dewsbury –0.75 | 825 |
| | | Hull – 1.46 | 1877 |
| | | Huddersfield LB – 0.85 | 1763 |
| | | Woodhouse Mill – 0.59 | 471 |
| | | Old Whittington – 0.63 | 413 |

| | | | |
|--------------------------------|---------------|------------------------|--------------------|
| | | Sandall –0.59 | 577 |
| | | | 13903 Total |
| Nitrous oxide reduction | £m per scheme | Knostrup – 1.93 | 933 |
| | | Blackburn Meadow –0.64 | 562 |
| | | Esholt – 0.58 | 397 |
| | | Dewsbury –0.51 | 474 |
| | | Hull – 0.86 | 840 |
| | | York – 0.48 | 262 |
| | | Huddersfield LB – 0.49 | 207 |
| | | Halifax Copley – 0.6 | 339 |
| | | Woodhouse Mill – 0.49 | 366 |
| | | Calder Vale – 0.47 | 317 |
| | | Old Whittington – 0.49 | 297 |
| | | Aldwarke – 0.5 | 245 |
| | | Sandall –0.49 | 179 |
| | | 5418 Total | |

We propose applying the PCD payment per unit to the difference between the forecast and actual outputs delivered for each type of output as at the end of AMP8.

We do not consider a delay penalty is necessary for this PCD. We are already incentivised through ODIs to deliver emissions reductions, and reputationally through our environmental reporting. Each scheme is unique, and a flat delay penalty could create the wrong incentives in what we deliver first.

Annex 2: Living with Water PCD

| PCD Delivery Expectation Description | |
|--------------------------------------|--|
| Description | <p>The Living with Water partnership is a collaboration between Yorkshire Water, Hull City Council, East Riding of Yorkshire Council and the Environment Agency to manage flood risk in the area. Hull University is the academic partner of Living with Water.</p> <p>The network in Hull and the surrounding East Riding is very complex, with the combined sewer network managing 88% of all surface water within the catchment. Due to the geography and topography of the area, the catchment is entirely reliant upon pumping (using Yorkshire Water infrastructure).</p> <p>Working collaboratively, the company will support the partnership to continue to improve flood resilience (focusing on a climate horizon of 2080) in Hull and the surrounding area by 2% through the installation of blue-green and grey infrastructure in AMP8.</p> <p>During this period the partnership will collaborate to install key enabling infrastructure for a new surface water network which will reduce reliance upon the combined network for city drainage, this will allow for further infrastructure to be installed in future AMPs significantly increasing the resilience of the catchment. The partnership will also continue to carry out detailed customer engagement to increase understanding and support for nature-based solutions in a very urban environment and build this learning into our business as usual and sharing our progress with the industry.</p> <p>This work will be carried out alongside wider Living with Water programmes which focus on education, engagement and knowledge sharing.</p> |
| Output measurement and reporting | <p>TEXT IF FUNDING IS INCREASED IN LINE WITH OUR REPRESENTATIONS: The area disconnected from the combined sewer network, reported in Hectares to 1 decimal place (if full business plan case is reinstated).</p> <p>TEXT IF DRAFT DETERMINATION FUNDING IS RETAINED AT FINAL DETERMINATION: The area managed by SuDS, reported in Hectares to 1 decimal place (if draft determination value is maintained).</p> <p>Company should report outputs annually in parallel with the APR</p> |
| Assurance | <p>The company must commission an independent, third-party assurer, with a duty of care to Ofwat, to assure, to our satisfaction, that the conditions below have been met and the outputs of the scheme set out below have been delivered.</p> |
| Conditions on Scheme | <p>The drainage network in the west of Hull (known as the West Network) is the planned initial implementation of the Blue Green Plan. This location has been agreed by the partners due to the level of flood risk in this location and because there is some recently constructed drainage infrastructure in this area (e.g., WADFAS, AEEFAS) and the Blue Green Plan provides an opportunity to separate paved areas by connecting into this infrastructure. However, if there is partnership interest in an alternative drainage network which means the same outcome can be delivered for equal or greater cost-benefit ratio, the company will substitute the drainage network where it can maximise the flood resilience achieved for Hull.</p> <p>All of our investment is subject to being able to secure matched funding from partners and other stakeholders. The LWW solutions are holistic and address sewer and surface water flooding at the same time, this ensures that the solutions minimise disruption during construction, are more sustainable, deliver wider benefits but most essentially are financially viable as tackling multi-source flood resilience is more efficient and gives access to multiple sources of funding. If no match funding is available the costs associated with managing sewer flooding only would increase disproportionately, becoming unaffordable for YW to deliver in isolation.</p> |

Most of the investment and benefit of the West Network development will occur from AMP9 once we complete enabling works, therefore we propose an area based target to monitor progress in the early first phase of delivery to ensure that the enabling works are effectively delivered.

Partnerships and collaboration can take multiple years to establish and agree solutions, which may vary from those identified for PR24. Accordingly, we are unable to specify the exact solutions we will implement. We have instead aimed for simplicity and an appropriate regulatory burden for the materiality of this enhancement funding. Alongside this, we consider we have a robust base for measurement, tracking and assurance against the Living with Water objectives. We will be able to:

1. Define the qualifying activities upfront as per our Living with Water technical appendix [\(YKY-PR24-DDR-33\)](#).
2. Provide evidence of submissions and feedback from the FCERM GiA programme where applicable, which is central government funding administered by the EA for projects to manage flood risk.
3. Identify the area managed/disconnected by the interventions delivered

We propose this is an end of AMP delivery PCD, with non-delivery returned on a unit cost basis. We do not include a formal delivery profile within the period. This is because the nature of the work within this PCD is highly dependent on partnership funding, the timing of which is very difficult to predict and is reliant upon national programming of Flood Defence Grant in Aid which is updated annually. An end of AMP target gives us flexibility and allows for the timing of funding from external partners to vary.

| Deliverable | Unit | Forecast Deliverables | | | | |
|---|----------|-----------------------|---------|---------|---------|---------|
| | | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 |
| Land managed | Hectares | N/A | N/A | N/A | N/A | 6.1 |
| Land disconnected from the combined network | Hectares | N/A | N/A | N/A | N/A | 10.5 |

Proposed PCD non-delivery payment rates.

The PCD payment will be calculated at the end of AMP8 based on the actual cost incurred on relevant activities at the end of March 2030.

| Deliverable | Unit Payment (£m) |
|--|----------------------------|
| A) Hectares disconnected from the combined sewer network (if full business plan case is reinstated). | A) £0.129m per 0.1 hectare |
| B) Hectares managed by SuDS (if Draft Determination value is maintained). | B) £0.25m per 0.1 hectare |

Annex 3: Storm Overflows – Clarifications required for measurement and reporting

Context

The approach requires WaSCs to measure (scheme by scheme) the equivalent storage planned and delivered in pursuit of spill frequency targets (usually 10 per year on average but possibly fewer when driven by water quality needs or where dictated by 'per bathing season' requirements).

Ofwat indicates a role for hydraulic modelling in determining a common currency of 'equivalent storage' for any conventional storage requirement (grey) but also for solutions that deploy 'green and grey-hybrid' solutions. These terms are not defined formally in the Ofwat appendix but are interpreted here as follows:

- Grey – conventional off-line storage that is emptied by returning flows to the continuation sewer AND measures that improve the conveyance through the system by upsizing downstream sewers or pumps AND measures that use active control to mobilise existing storage. It is noted the change of FFT at a WwTW is covered by a separate PCD.
- Green – measures that manage stormwater to more closely mimic natural processes through separation or attenuation. This may include retrofit SuDS measures but also conventional sewerage separation and the construction of new surface water sewers discharging to waterbodies. It is noted the use of wetlands as an overflow solution is covered by a separate PCD.
- Green and grey hybrid – a combination of the above, optimised to the same spill frequency and water quality outcome.

Ofwat requires that WaSCs report on the 'actual volume of equivalent storage delivered' for each scheme and broken down in categories 'grey' and 'green and grey' hybrid with a precision and robustness such that the calculation can be externally assured. WaSCs should also indicate whether the solution was provided at the WwTW or in the network. The use of (easier to measure) substitutes such as area removed or managed is prohibited.

Ofwat also requires that WaSCs demonstrate:

1. That an investigation has determined the root cause of spills and that a best value solution has been identified as the solution.
2. That the allowance (awarded scheme capex) is for enhancing the operation of assets fully compliant with permits, specifically pass forward flow conditions.
3. The effect of the solution through a 'before' and 'after' set of hydraulic modelling results.
4. The Environment Agency's confirmation that the scheme has been delivered in accordance with the WINEP obligation.
5. Third party assured forecasts in July 2028 for equivalent storage to be delivered in 2028/9 and 2029/30.

We recommend that these requirements are addressed through a specific storm overflow solution report for each storm overflow, or for the whole catchment where there are multiple overflows improved in AMP8.

Clarifications required

We request more clarity is provided on the following areas:

1. The guidance is unclear on the application of the PCD at scheme or programme aggregate level. Were a scheme level approach to be applied each solution would be capped at PR24 costs with the only variation being a reduction due to less than the PR24 defined equivalent storage being required. This would potentially remove the benefit of any efficiency activities and not encourage innovative solutions. We suggest a programme level approach to the PCD is required and reflects the uncertainty in the data used for PR24, given the late issuing of the driver guidance and subsequent WINEP deadlines, and the efforts of WASCs to improve solution confidence and provide efficient solutions.

2. Allowance of substitution of schemes, between differing overflows and of solution type at an overflow. This remains unclear from the multiple references within the Ofwat document. We suggest that WASCs can swap schemes provided that they are delivering the same driver benefit. For instance, an EnvAct_IMP4 scheme could be swapped with another EnvAct_IMP4 scheme, as they both result in reducing spill frequency to 10 spills per year on average. This would ensure that the total storage for the AMP is set as part of the business plan agreement and then managed at a programme level, so that the customer is protected from any price rises as part of the swaps.

3. Ofwat's approach is contingent on there being a hydraulic model of the catchment/overflow through which equivalent storage can be demonstrated. WASCs may move ahead (with good reason) to design solutions without a hydraulic model and will then not be able to use this form of

validation for non-storage solutions.

Equivalent storage recommendations

Ofwat indicate the following:

When developing non storage solutions, equivalent storage should be calculated by running a hydraulic model with the alternative solution included within the model, and assessing the extent to which the storage requirement is reduced. Equivalent storage must be assessed against the storage volume required at the storm overflow, and not using theoretical conversion rates based on area removed, unless the impact of the alternative works on the required storm overflow storage volume can be clearly demonstrated. The model used to assess equivalent storage should be fit for purpose and constructed in accordance with the Code of Practice for the Hydraulic Modelling of Urban Drainage Systems, CIWEM UDG, 2017.

Ofwat invite commentary:

We welcome views on further assumptions that should be defined in order to ensure consistency, such as whether the default assessment should be based on offline tanks; whether there is a need to define when tanks should begin to drain down or define return pump rates, as we are aware that these could significantly influence storage volume.

As models are improved and design processes are commenced, some flexibility is needed. Hence our recommendation for using a **'design equivalent storage'**.

'Design equivalent storage' (DES) is the offline storage (maximum stored volume before spills commence) that, when emptied (once flows subside) at a WASC specific consistent rate (e.g. equivalent to 17% (1/6) of the pass forward flow at the overflow), results in an average of 10⁵ spills per annum when tested in a 'fit for purpose'⁶ hydraulic model updated to represent a 2050 design horizon (inclusive of growth, creep and climate change).

Solutions that blend different measures that still result in the same 10 spills outcome will share the same total DES. Through subtraction the DES of SuDS type measures can be defined. For example, if DES is 1000m³ and the solution includes provision of a 600m³ storage tank, the DES of the 'other' measures will be 400m³. DES can thus be defined for measures such as increasing the network pass forward rate, the removal of inflows, the deployment of attenuation measures and the use of Real Time Controls that activate existing storage.

£370.28m repurposed storm overflow enhancement expenditure

We would like to request a PCD to cover the entire £370m programme and based on delivery by Dec 2028.

The plan has been designed to deliver a reduction in discharges and has been developed as a grey only plan. Due to the size and scale of the changes we have made and the restricted timescales in which it was developed, we have not been able to fully develop a range of delivery options. We will seek to update our delivery approach through our asset management processes and deliver the optimal solution with low regrets approach to delivery of these schemes. We would like a flexible approach to changing these schemes as once we undertake further investigation these may not be the most appropriate sites to progress.

We will commit to the overall equivalent volume of storage proposed and through our assurance process for our APR submission we will ensure there is focused progress and updates. This will be delivered at a programme level not on a scheme by scheme basis aligning with the proposal for our statutory storm overflow PC narrative.

Due to time constraints the current expenditure profiles for this programme of work have been split equally over the delivery window and will be subject to change and updating as we progress with our asset management processes. This means that all our volume is currently profiled to deliver on 31 December 2028 for our £370m programme. As such we are unable to offer a volume profile akin to the statutory storm overflow PC narrative.

⁵ Or other appropriate spill frequency design standard (e.g. 3 spills per bathing season)

⁶ The meaning of 'fit for purpose hydraulic model' is contentious and the UDG Guidance is not helpful in defining it. As a minimum we recommend WASC's follow standard processes including the assessment of baseline model vs EDM dataset, which should be assured at programme not scheme level.