

Yorkshire Water

Response to Ofwat Draft Determination

PR24 Cost Change Process: Asset Health 2026

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[The contents of this document have been redacted due to it containing commercially sensitive information or in the interests of security]

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1. Executive Summary

Yorkshire Water welcomes Ofwat's Draft Determination and the conclusion that the company has provided sufficient and convincing evidence across the principal assessment tests for its two Asset Health submissions. Ofwat has accepted the underlying need for investment, the option selection process, customer protection arrangements and delivery plans for the in-scope borehole and trickle filter investments. Accordingly, this response focuses on the areas where the Draft Determination materially reduces the proposed expenditure allowances and where we believe further clarification, reconsideration or correction is required.

Yorkshire Water submitted a combined allowance request of **£39.295 million** to address significant asset health risks across its Boreholes and Trickle Filters programmes. The Draft Determination allows **£27.213 million**, a reduction of approximately **31%**. This reduction arises principally from the exclusion of two borehole schemes with a submitted value of **£3.38 million**, the application of a **19.79% efficiency adjustment** to the remaining borehole programme, and a **26.03% efficiency adjustment** to the Trickle Filters programme.

The Draft Determination therefore accepts the underlying Asset Health need for the included assets and the requirement for intervention. The key issue is not whether investment is necessary, but whether the final allowance is sufficient to deliver the accepted outputs and outcomes efficiently and sustainably. We consider that the Draft Determination risks underfunding recognised Asset Health needs through scope and cost adjustments that do not fully reflect the strength of the evidence submitted, the maturity of the company's assessment approach, or the practical realities of delivering major capital maintenance on long-life operational assets. We also question whether evidential standards have been applied consistently across companies and whether the efficiency challenge applied to Yorkshire Water is justified by the available evidence.

We do not believe that the efficiency adjustments applied in the Draft Determination are supported by evidence of inefficiency. Independent review by [\(Appendix A\)](#) concludes that Yorkshire Water's submissions are consistent with Ofwat's published guidance and comparable with approaches adopted elsewhere in the sector. For the Trickle Filters programme, cost estimates were derived using robust internal cost models informed by historical delivery data and actual scheme costs. For the Boreholes programme, we intentionally adopted a more conservative approach, triangulating costs across multiple independent sources to address uncertainty associated with limited recent delivery experience and to increase the robustness of estimated costs. Ofwat's commentary focuses primarily on the sufficiency and presentation of evidence rather than identifying demonstrable inefficiency within the proposed costs. Despite providing extensive supporting evidence, including internal benchmarking, multiple external benchmarking sources and independent assurance, Yorkshire Water has received some of the largest cost efficiency adjustments applied across the sector. This raises concerns regarding the consistency of evidential standards and assessment outcomes.

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We also disagree with the exclusion of the two borehole schemes from the final allowance. These schemes address established Asset Health needs and remain Asset Health interventions irrespective of when restoration to service occurs. We therefore do not agree that the schemes should be recategorised on the basis of timing considerations and request that they are reinstated within the Final Determination.

In addition, we would like to seek clarification of the basis upon which AMP9 transitional Asset Health expenditure and retrospective AMP8 uplifts have been allowed for other companies. Our understanding is that these opportunities were not explicitly available to all companies through the published process. Where such adjustments are to be recognised, it is important that the underlying principles and assessment criteria are clearly articulated to ensure consistency, transparency and equitable treatment across the sector for all current and future Cost Change submissions.

Our proposal has been developed on the basis that the final expenditure allowance will enable the efficient delivery of the proposed outputs and associated customer, environmental and resilience outcomes. Should the Final Determination result in a materially lower allowance that prevents those outputs from being delivered to the required standard, Yorkshire Water reserves the right to seek revisions to the scope, timing and delivery obligations associated with the programme, including the withdrawal or modification of commitments that can no longer be delivered efficiently within the funding provided.

We support Ofwat's objective of ensuring efficient expenditure and welcome appropriate regulatory challenge. However, we are concerned that the assessment outcomes may create a perception that companies providing the most extensive and transparent cost evidence are subject to the greatest degree of adjustment. If left unaddressed, this risks weakening incentives for companies to invest in developing and disclosing detailed cost information in future submissions. Such an outcome would be detrimental to the quality of evidence available to both companies and the regulator and could undermine confidence in the regulatory process. We therefore encourage a transparent and proportionate assessment framework that continues to incentivise openness, robust cost development and high-quality evidence, while ensuring that accepted Asset Health outcomes are supported by sufficient and deliverable funding allowances.

2. Summary of Representations and Changes Requested

The table below summarises the representations made in this response and the amendments Yorkshire Water requests Ofwat to make in the Final Determination.

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Representation	Draft Determination issue	Change requested in Final Determination
R1. AMP9 transitional expenditure and AMP8 uplifts	The Draft Determination allows AMP9 transitional expenditure and retrospective AMP8 uplifts for some companies, although the published guidance was understood to focus on delivery within years 3–5 of AMP8.	Clarify the decision rules and apply the same opportunity consistently to Yorkshire Water for future Cost Change submissions. Set the combined Boreholes and Trickle Filters “what base buys” PCD at Ofwat’s £6.6 million estimate.
R2. Borehole scope for [REDACTED]	Ofwat excluded £3.38 million because the assets were out of service, treating the schemes as Resilience rather than primary Asset Health expenditure.	Fully reinstate [REDACTED] as Asset Health interventions, together with their associated investment requirement.
R3. Trickle Filters: robust and efficient costs	Ofwat applied a 26.03% adjustment using lower comparator estimates that are not demonstrably like-for-like and omit material scope, delivery risk and optimism bias.	Remove the 26.03% adjustment and use Yorkshire Water’s internal cost models as the primary basis for the final allowance.
R4. Boreholes: robust and efficient costs	Ofwat applied a 19.79% adjustment after excluding the independent third-party estimate, while more mature tender evidence indicates significant upward cost pressure.	Increase the final Boreholes allowance to £16.31 million, based on the revised triangulation incorporating updated cost evidence.
R5. Comparative treatment of cost evidence	Ofwat applied materially greater cost reductions to Yorkshire Water than to companies that submitted comparable or less extensive evidence, without transparently demonstrating inefficiency.	Reassess the Boreholes and Trickle Filters adjustments using transparent and consistent evidential thresholds, recognising the breadth and independent assurance of Yorkshire Water’s evidence.

3. Representation on Ofwat’s Draft Determination Guidance

Through query CCP26-YKY-IBQ-003 ([Appendix B](#)), Yorkshire Water asked Ofwat to clarify whether Asset Health expenditure may commence in AMP8 and continue into AMP9, what approval considerations apply to expenditure spanning price control periods, and whether AMP9 expenditure would be governed by the PR24 Final Determination or the future PR29 methodology. The query explained that, in the absence of further guidance, we had interpreted the published process conservatively and excluded schemes that could not be fully delivered by 2030, while the Draft Determinations permit AMP9 expenditure for other companies. Ofwat did not provide a substantive response to these points through the query process, instead proposing further discussion, confirming that Yorkshire Water could raise the matter through its formal representation and indicating that further guidance would be issued for the 2027 Cost Change process. This representation therefore seeks a clear decision for the Final Determination and consistent treatment for Yorkshire Water in future Cost Change submissions where comparable transitional expenditure or retrospective AMP8 uplifts have been allowed elsewhere.

3.1 AMP9 Transitional Allowance

We prepared our 2026 Asset Health submissions on the understanding that this submission window was focused on additional investment to be delivered in AMP8. We therefore did not include investment options that extended, or at risk of extending, into the AMP9 period in our 2026 submission. That approach reflected our good-faith interpretation of the guidance and our intention to avoid any ambiguity around double funding.

This lack of clarity has materially disadvantaged Yorkshire Water relative to the companies allowed substantial AMP9 transitional funding. By excluding schemes that could not be completed within AMP8, we are potentially at least one year behind in scheme development and delivery, delaying asset health improvements and increasing the risk of adverse performance commitments and subsequent financial impact of outcomes delivery incentives.

The Draft Determination creates a potential inconsistency. If Ofwat’s position is that the 2026 process can allow Asset Health expenditure beyond 31 March 2030, or can allow additional funding for AMP8 activity already planned or commenced (see Section 3.2), then these principles should have been clearly stated in the guidance and applied consistently to all companies. Without such clarification, companies that interpreted the guidance conservatively will be disadvantaged relative to companies that submitted broader timing profiles. Yorkshire Water are engaged in more detailed discussions with Ofwat regarding this issue – the objective to ensure that asset class cases identified in our 2026 submission, and explicitly excluded on the basis that they were considered undeliverable within AMP8, would receive equitable assessment, given the effective 12 month delay, should they be progressed through the 2027 Cost Change process.

3.2 Retrospective AMP8 Uplifts

The consistency concern identified in Section 3.1 also applies to retrospective AMP8 uplifts. Where planned AMP8 activity exceeds the implicit allowance for an asset group, any residual uplift should be assessed transparently and consistently across the sector.

Connected to the above, Ofwat assessed a point estimate of “what base buys” (WBB) of **£6.6 million** (Boreholes and Trickle Filters) for Yorkshire Water, which was lower than the **£9.7 million** estimated by Yorkshire Water. Had we aligned with the Ofwat approach this would have been accepted and we would have had the option to either request an additional uplift for the residual activity or, as a

minimum, reduce our what base buys price control deliverable (PCD) to reflect Ofwat's view of what base buys and allow for more flexibility within Yorkshire Water's existing base programme.

Yorkshire Water therefore asks Ofwat to allow retrospective AMP8 uplifts as well as clarify the decision rules used to allow AMP9 transitional expenditure. If Ofwat maintains that such expenditure is allowable within the 2026 process, we consider that the same principle should be available to Yorkshire Water for future Cost Change submissions where comparable Asset Health evidence exists.

Requested Amendment

Ofwat should confirm whether AMP9 transitional expenditure and retrospective AMP8 uplifts are within the scope of the 2026 (and subsequent submissions) Asset Health Cost Change process and set out the decision rules applied. If these forms of expenditure are allowable, the same principles and an equivalent opportunity to submit supporting evidence should be applied to Yorkshire Water for future Cost Change submissions.

Ofwat should also set Yorkshire Water's combined Boreholes and Trickle Filters "what base buys" PCD value at its own **£6.6 million** point estimate, rather than Yorkshire Water's £9.7 million estimate, so that the PCD is consistent with Ofwat's assessment and provides equivalent flexibility within the existing base programme.

4. Boreholes: Representation on Need, Scope and Excluded Schemes

Ofwat has accepted that Yorkshire Water's Boreholes submission provides sufficient and convincing evidence for a step change in investment to address Asset Health. In particular, Ofwat accepted Yorkshire Water's assessment of what base buys and acknowledged the evidence of deteriorating asset condition, historically low intervention rates and the wider sector-wide borehole asset health challenge. However, Ofwat excluded £3.38 million associated with the schemes on the basis that the assets are currently out of service.

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We consider this classification to be inconsistent with the underlying driver for the investment. Although the boreholes are currently out of service, they became non-operational as a direct consequence of asset deterioration, including borehole degradation and fracturing, resulting in sand pumping, turbidity and associated operational risks. Their withdrawal from service was therefore the result of asset failure arising from deteriorating condition, rather than a strategic operational decision.

The proposed interventions are required to restore the functionality and performance of existing licensed abstraction assets that have deteriorated to the point of failure. The schemes do not create new assets or provide additional capability beyond that previously available from the boreholes. The expenditure is required because the assets have deteriorated and can no longer perform their intended function.

The underlying causal event was deterioration of the borehole assets. The passage of time changes neither the nature of that asset health deterioration nor the reason the assets became unavailable, therefore the investment remains necessary. Delay in intervention should not reclassify the underlying need. The Draft Determination effectively draws a distinction between assets that are expected to fail in the future and assets that have already failed as a result of deterioration. However, the underlying need in both cases is the same: investment is required because asset condition has deteriorated to an unacceptable level.

represent realised asset health failures, where deterioration has already resulted in the loss of asset functionality. The distinction drawn between assets expected to fail and assets that have already failed leads to an inconsistent regulatory outcome. If investment to prevent a Condition Grade 5 asset from failing is classed as Asset Health expenditure, then investment to rectify the same Condition Grade 5 asset after failure should also be classed as Asset Health expenditure. The underlying driver in both cases is deterioration of asset condition.

Excluding from the Asset Health case therefore creates an inconsistency in the treatment of equivalent Asset Health needs. Under this approach, investment is recognised as Asset Health when responding to deteriorated assets before failure occurs, but not when responding to the same deterioration after failure has occurred. The classification of expenditure should be determined by the reason the investment is required, namely deteriorated asset condition, rather than the operational status of the asset at the point intervention is proposed.

Ofwat's own Asset Health guidance explicitly recognises the relationship between Asset Health and Resilience, stating that a move to a long-term sustainable renewal rate may be required to **"improve asset health and help ensure long-term resilience"** (dated December 2025, Section 1.4, pg6). This position is inconsistent with the Draft Determination which categorises the schemes as 'out-of-scope' due to being *"associated with increased resilience"*. The original guidance demonstrates that Asset Health and Resilience are not mutually exclusive concepts within the regulatory framework. In the case of , the investment

need arises directly from asset deterioration and the resulting loss of asset functionality, meaning the primary driver remains Asset Health. However, even if Ofwat considers the schemes to deliver resilience benefits, this would not provide a basis for exclusion from the claim. Rather, it would be consistent with Ofwat's published guidance, which explicitly recognises that investment to address deteriorating asset condition can also support resilience outcomes. The removal of these schemes therefore appears inconsistent with the principles set out in the Asset Health assessment guidance.

1.4 How to use this guidance

This guidance should be used to support the development of investment cases where a need for step-change in investment has been identified for the priority assets. The need for additional investment may be required to (but not limited to):

- Move to a long-term sustainable renewal rate (a higher rate that has been delivered than in the recent past) to improve asset health and help ensure long-term resilience;
- Address a step-change in a direct risk to assets because of external factors such as climate change or other environmental impacts;
- Address a step-change in risk to future service because of higher than expected rates of asset deterioration; and/or
- Address high consequence risks for assets that require infrequent but major investment, for example replacement or major refurbishment of service reservoirs.

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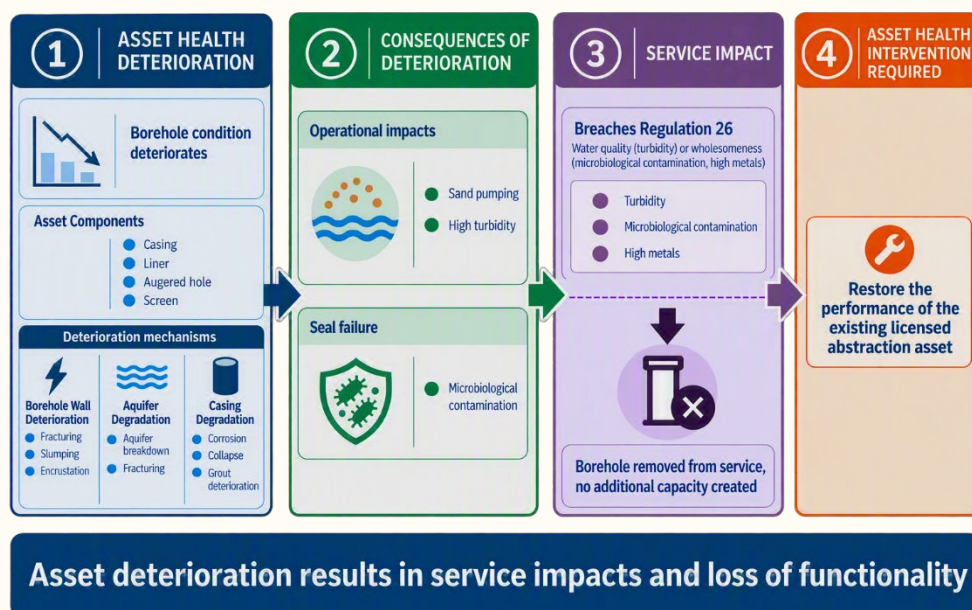
Furthermore, [redacted] were identified through our prioritisation process as two of the highest risk borehole sites within the portfolio. Their selection was driven by severe asset condition deterioration and associated operational and water quality risks, demonstrating that Asset Health considerations were the primary justification for investment. The need for intervention arose directly from the extent of deterioration and the loss of the assets' ability to operate as intended.

We therefore consider that the primary driver for both schemes is asset deterioration that has resulted in loss of asset functionality. As such, [redacted] should be classified as Asset Health investments because the expenditure is required to address the consequences of deteriorated asset condition and restore the performance of existing assets.

This distinction is particularly important for boreholes, where structural deterioration can lead to water quality issues, sand pumping and high turbidity, which may then require a responsible operational decision to remove an asset from service. A company should not be penalised for managing the immediate operational and compliance risk responsibly while seeking an efficient capital maintenance solution at an appropriate point in time aligned to regulatory processes.

As illustrated in **Figure 1** below, the loss of service at [redacted] is the direct consequence of progressive asset health deterioration, leading to water quality compliance and operational risks resulting in asset failure. This demonstrates that the underlying driver for investment is asset health deterioration rather than any separate Resilience objective.

Figure 1: Borehole failure root cause flow diagram



Scheme	Yorkshire Water evidence	Requested amendment
[Redacted]	Condition Grade 5 asset. Non-operational due to asset deterioration resulting in sand pumping and high turbidity. Proposed intervention restores an existing borehole asset affected by deterioration.	Reinstate as an in-scope Asset Health intervention because the primary driver is asset condition.
[Redacted]	Condition Grade 5 assets. Non-operational due to sand pumping and turbidity driven by deterioration of the borehole structures. Proposed interventions address structural and water quality deterioration.	Reinstate as in-scope Asset Health interventions as the works address deterioration of existing assets rather than new capacity provision.

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Requested Amendment

Yorkshire Water requests that Ofwat fully reinstates [Redacted] to the requested Asset Health allowance.

5. Trickle Filters: Representation on Robust and Efficient Costs

This section challenges Ofwat's 26.03% Trickle Filters cost efficiency adjustment and explains why Yorkshire Water's internal cost models provide the most robust and deliverable basis for assessing efficient costs. It presents further evidence that the lower external benchmarks are not like-for-like because they exclude material scope and delivery risks captured within Yorkshire Water's internal estimates, supported by historical outturn costs and independent assurance.

5.1 Our Submission

Commentary on Yorkshire Water's approach to cost benchmarking and efficiency from our original submission:

- Yorkshire Water utilised company internal cost models as the primary determinant for solution costs. This follows a consistent application with other regulatory submissions and is appropriate where robust and confident internal cost models exist.
- Yorkshire Water obtained external benchmarks from multiple sources: [REDACTED] (third-party) and WRc TR61. These were not used in any form to influence the submission cost due to notable cost risk exclusions compared to the internal cost models, which include for materialised scope and delivery cost.
- Yorkshire Water assessed the internal cost model outputs against a recent outturn scheme, as well as analysed the relative range of cost uncertainty at this stage of project development and concluded that the internal costs were reasonable and realistic.
- Independent assurance supports the appropriateness of Yorkshire Water's costs for this stage of project development and, after challenge, considers the rationale for the variance to external benchmarks to be reasonable.

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5.2 Summary of Ofwat Draft Determination

Ofwat accepted the need for investment and the broader cost development methodology but concluded that costs only partially met the robust and efficient costs criteria:

- A 26.03% efficiency adjustment was applied.
- Ofwat considered Yorkshire Water's submitted costs were significantly above comparator benchmark estimates and that the submission did not sufficiently quantify the factors driving this difference.
- Ofwat rejected Yorkshire Water's approach to use cost models and applied an unweighted triangulation.
- Ofwat excluded the third-party ([REDACTED]) estimate from triangulation, citing concerns regarding the confidence and reliability associated with an AACE Class 4 estimate.
- Ofwat recalculated efficient costs using the remaining evidence sources and derived a lower cost allowance.

5.3 Summary of

Recommendations

[REDACTED] recommendations for Trickle Filters cost efficiency are summarised below:

- Provide further evidence to explain why there are company specific factors determining why external cost benchmarks are materially different.
- Provide further information on our confidence in its internal estimates.

The following section presents the additional explanation and evidence, and the conclusions drawn from it.

5.4 Use of Internal Cost Models and Benchmarking

In assessing the appropriateness of each cost estimate for the Trickle Filters schemes, we concluded in our submission, and maintain, that, as the Yorkshire Water cost models are inclusive of all realised costs and that the external estimates provided have notable exclusions (submission *Table 15*), that the realistic efficient cost of delivery is the Yorkshire Water UCD cost model estimate. We believe that the exclusions from the external benchmarks is evidence that the external cost estimates will only have significant upward cost pressure and therefore the higher utilised UCD cost model estimate is appropriate. We state this in the submission document (Section 5.3, pg51):

"Yorkshire Water cost models also mitigate us from any potential scope uncertainties and increases arising after this submission's notional design, as the cost models include for all materialised direct and ancillary scope from previous, similar asset constructions – whereas, for example, the and Delivery Partner cost estimates are provided with a list of caveats and exclusions that only represent upward cost risk."

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The above statement also underpins Yorkshire Water's efficiency challenge from Ofwat in terms of optimism bias. We have not explicitly included optimism bias uplifts in our submission for Trickle Filters, however other water companies have. We acknowledged that by using our internal cost models, which include for materialised project risk, we believe this provides some contingency for any potential uncertainties in design or delivery. However, Ofwat does not appear to have considered this when making their efficiency assessment, whereas other water companies have not had their optimism bias challenged or reduced. acknowledge this too (Section 3, pg4, footnote 9):

"We note that Ofwat has made no efficiency adjustment to companies who have explicitly captured optimism bias and risk allowances as part of their internal cost benchmarking"

We therefore believe the level of efficiency reductions applied to our Trickle Filters costs are excessive and not comparative to other companies' determinations – whereby Ofwat's calculation has used the external benchmarks, which have risk cost exclusions. When these values are combined in triangulation with the UCD internal cost estimates (which account for all average materialised project risk and contingency), there is a disproportionate influence lent to the incomprehensive external benchmarks on the final cost.

This is especially important for , which accounts for a significant proportion of the submitted cost and involves replacement with an activated sludge process. The scope is more complex than a like-for-like filter replacement and the use of the external cost estimates by Ofwat, with their cost exclusions, creates a cost reduction that is unfeasible for the scope to be delivered. The scope exclusions from the external benchmarks referenced in the submission (submission *Table 15*) are more prominent in ASP schemes and therefore increase total cost more significantly than like-for-like trickle filter schemes (e.g. power supply provision/upgrade, new MCC or systems integration, piling or structural reinforcement).

For example, a comparator scheme was delivered in AMP6 at Northallerton STW whereby the site trickle filters were replaced with an activated sludge process. The scheme included for the provision of new ASP and distribution switchboard MCCs, associated integration and power transformer – which are exclusions from the external Delivery Partner and cost estimates referenced in the submission document (*Table 15*). These costs equate to 19.7% of the total direct costs for the scheme (**Appendix C**), clearly indicating that they are a significant requirement for realistic delivery needs. This indicates a major excluded cost from the external cost benchmarks for a typical ASP scheme, reinforcing our view that the external benchmarks are not appropriate for use in determining an

actual delivery cost. Therefore, for all the proposed schemes, but especially [redacted], we recommend that the external cost estimates are excluded in the Final Determination of the allowance unless they are first normalised to the same costing scope.

On the point of providing further evidence for our internal cost estimate and that they are the most appropriate primary basis for the cost estimation for the Trickle Filters schemes, we have compiled **Table 1** and **Figure 2** below, where we compare the submitted scheme costs to previously delivered historical schemes (including the aforementioned AMP6 Northallerton STW ASP comparator).

Table 1: Comparison of outturn and estimated costs for schemes replacing trickle filters with ASP

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Table 1 compares the costs for replacement schemes at Northallerton STW (AMP6) and [redacted] (AMP8 Cost Change submission), where existing trickle filter assets were replaced with ASP treatment processes. While the [redacted] scheme has a higher estimated cost (£10.84 million vs. £6.34 million, excluding YW oncosts), it is also materially larger in scale, replacing eight trickle filters compared with four at Northallerton and providing significantly larger treatment assets – a 56% larger ASP tank volume and 90% larger final settlement tank area. The cost differential between the projects (71%) is proportionately within the range of the increase in asset size, suggesting that costs scale reasonably with the scope of work. On this basis, the [redacted] cost estimate appears consistent with historical delivery experience at Northallerton and provides supporting evidence that the forecast expenditure for this scheme is reasonable and realistic for a project of this complexity and output.

The ASP represents 50.1% of the Northallerton outturn direct cost, whereas the FSTs account for 30.7%. Whilst these cost splits suggest that the ASP is the primary cost driver on overall project expenditure in the Northallerton scheme example, the much greater proportional increase in size for the FSTs in the [redacted] scope (90%) creates a material, comparable influence of the FST cost driver on the scheme total cost – using a simple weighted assessment returns a 69% increase for the costs compared in the analysis (80.7% of the total scheme cost), which aligns with the 71% increase indicated in **Table 1**. This reiterates that the 71% increase in cost from Northallerton to [redacted] ASP schemes is within expectation and deemed reasonable to sit within the range of the comparable cost drivers for ASP (+56%) and FST size (+90%).

The decision on the UCD internal cost models representing the appropriate cost is also reinforced in comparison of unit rate data to the recent completed trickle filter rebuild scheme referenced in the submission narrative (submission **Figure 24**). This comparison with a similar trickle filter replacement intervention (AMP6 Leven STW) shows that a materialised filter scheme outturns at a much higher £/m2 than the allowed Ofwat DDR cost – as well as higher still than the whole submission unit rate requested by Yorkshire Water, indicating that our submitted cost is still efficient against this point comparison. We build on this by adding additional historical schemes for trickle filter constructions (**Figure 2**). The Yorkshire Water submission unit rate sits at a mid-point amongst some historical comparisons showing that the proposal costs are representative of an average cost to deliver these interventions. The wide range in outturn costs ([redacted]) illustrates the inherent differences in site specific complexities and resulting materialised cost, which highlights that the UCD modelled cost is a 'typical' cost and there will be scheme specific variances to this. We believe

this further reiterates that the draft allowance determined by Ofwat using incomprehensive external comparator scopes materially undercuts the true cost of delivering trickle filter interventions (replacements in particular). Whilst it has not been possible to explicitly quantify the variance on each scheme between the UCD estimate and the external cost estimates, the comparison to internal benchmarks, in the form of outturn schemes, is evidence of the inconclusiveness of the external benchmarks – the external benchmark unit costs are lower than nearly all of the historical indicators (**Figure 2**). The historical comparator unit cost represents a true cost to Yorkshire Water, therefore Ofwat’s triangulated determination unit rate weakens the realistic cost estimation and will likely create a funding gap.

Figure 2: Comparison of Trickle Filters submission total cost unit rates and comparator historical benchmark schemes

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Ofwat state in their assessment guidance (dated December 2025, pg16) that ***“the proposed costs should be reflective of actual delivery costs”***. We believe the evidence above provides clarity that the required costs to deliver the proposed schemes are aligned to the UCD cost model estimates and they are efficient when compared to historical comparators, as opposed to Ofwat’s DDR allowances. The comparative analysis presented in **Figure 2** clearly demonstrates efficiency and conforms to Ofwat’s ‘What good looks like’ assessment guidance (dated December 2025, Section 3.4.3, pg16) – ***“Costs of final intervention options are benchmarked to demonstrate efficiency. Benchmarking should be against internal cost benchmarks (historical costs)”***.

The external assurance evidence supports our costing approach. Our independent assurance provider, , acknowledged that ***“the robustness and efficiency of the costs have been a key focus of the assurance exercise”***. In summary, they found the use of the UCD cost models and the resultant submission costs ***“to be reasonable for this stage of project development”*** as well as challenged why the UCD cost models and external cost estimates are different. In setting out the exclusions from the external benchmarks, they also concluded that they found the costing approach ***“to be reasonable”***. This strengthens our decision to only use internal costs for this proposal and not displace a robust estimate with lower, incomplete comparators. We believe Ofwat should consider the findings of this independent challenge when assessing the appropriateness of the costing approach taken for each submission.

5.5 Yorkshire Water Draft Determination Request

We do not consider that the adjustment reflects the efficient full cost of delivering the accepted Asset Health outcomes. We believe that, contrary to the Boreholes approach, the use of the lower comparator estimates in this case is not demonstrably like-for-like with Yorkshire Water's UCD estimates and therefore cannot form part of a triangulation. The UCD cost models used in the build-up contain a relatively high amount of, and recent, datapoints, providing a stronger empirical basis for using the UCD costs as the primary cost estimate. This approach, where the external cost estimates serve as comparative, supplementary benchmarking, is consistent with our general methodology used in previous price reviews as the cost models represent the average, efficient cost to deliver assets based on observed outturn.

agree with this in their report stating:

"Overall, we find no material difference in the type of evidence relied upon by Yorkshire compared to other companies. Most companies, including Yorkshire, rely primarily on historical cost data from previously delivered asset health interventions and supplement this with external benchmarking (where available)."

We ascertain we have applied Ofwat's assessment criteria for robust and efficient cost stated in their guidance – to use established and transparent cost methodologies based on the use of historical costs (i.e. our robust UCD cost models for trickle filters), suitably tested against external benchmarks and, where costs are significantly different from the benchmark, providing sufficient and convincing evidence.

We believe, and explain in our submission and here (Section 5.4), that the robustness of our Trickle Filters cost models is evidence for our costing application, whereas the deviation in approach in the Boreholes submission is due to the lack of confidence in the cost sources and divergence from real, in-flight AMP8 borehole costs. This maintains our position that our primary basis for cost are our internal cost models, where they provide confidence through quantity and temporal coverage of datapoints and include the full scope and delivery risks, which are conversely omitted from the lower external benchmarks. We resubmit our original costs on this basis – shown in **Table 2**.

Table 2: Original submission, Ofwat DD and Yorkshire Water DDR costs for Trickle Filters

Trickle Filter Site	Original Submission (£m)	Ofwat DD (£m)	YW DDR Request (£m)
Content is redacted due to it containing commercially sensitive information or in the interests of security.	13.16	9.74	13.16
	6.26	4.63	6.26
	0.77	0.57	0.77
	0.44	0.33	0.44
	0.53	0.39	0.53
	4.45	3.29	4.45
Total	25.61	19.92	25.61

Requested Amendment

Yorkshire Water requests that Ofwat removes the 26.03% Trickle Filters cost adjustment and adopts Yorkshire Water's independently assured internal cost models as the primary basis for the final allowance. We challenge the capability to deliver the Trickle Filters programme with such an efficiency.

6. Boreholes: Representation on Robust and Efficient Costs

This section challenges Ofwat's 19.79% Boreholes cost efficiency adjustment and sets out why Yorkshire Water's multi source cost triangulation, including the independent third-party estimate, remains an appropriate and independently assured basis for assessing efficient costs. It presents further evidence on estimate comparability, uncertainty and outliers, alongside more mature tender evidence from [REDACTED], and requests an increase in the final Boreholes allowance to £16.31 million.

6.1 Our Submission

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Commentary on Yorkshire Water's approach to cost benchmarking and efficiency from our original submission:

- Yorkshire Water used an unweighted average across its internal cost estimate and three independent external benchmarks. This was a deliberate response to uncertainty in internal models, which were based on only two and four datapoints respectively.
- Yorkshire Water's submitted triangulation reduced reliance on any single uncertain source. [REDACTED] considers triangulation appropriate and notes that Yorkshire Water were the only company to apply a formal triangulation approach across multiple evidence sources.
- Yorkshire Water prepared all estimates for the same defined interventions at concept stage. A higher estimate is not, by itself, evidence of inefficiency. Excluding it places asymmetric weight on lower estimates without first demonstrating a material difference in scope, assumptions, maturity or risk coverage.
- Independent assurance supported the rationale for cost triangulation of the available cost benchmarks at this stage of development and highlighted a risk that the costs could exceed the proposed spend when compared with more mature borehole schemes in AMP8 delivery.

6.2 Summary of Ofwat Draft Determination

Ofwat accepted the need for investment and the overall costing approach but concluded that costs only partially met the robust and efficient costs criteria:

- A 19.79% efficiency adjustment was applied.
- Ofwat's primary concern was Yorkshire Water's use of an unweighted triangulation methodology, which gave equal influence to the third-party ([REDACTED]) estimate, which is materially higher than other evidence sources.
- Ofwat considered there was insufficient justification for both the higher third-party estimate and the equal weighting applied across all cost sources, citing concerns regarding the confidence and reliability associated with an AACE Class 4 estimate.
- Ofwat accepted Yorkshire Water's approach for Boreholes, to triangulate multiple cost sources.
- Ofwat excluded the third-party estimate from its assessment and recalculated lower costs using the remaining evidence sources.

6.3 Summary of [REDACTED] Recommendations

[REDACTED] recommendations for strengthening the Boreholes cost claim ahead of the Final Determination are:

- Provide further evidence explaining the divergence between Yorkshire Water's internal cost estimates and the external comparative evidence, including whether the scope, cost coverage and underlying delivery assumptions are sufficiently comparable.
- Provide further information on the relative confidence in the internal and external estimates.

- Explicitly incorporate appropriate risk allowances or optimism bias within the internal cost estimates, given the limited sample sizes and the risk that historical delivery evidence may not fully capture scheme specific uncertainty.
- Consider an alternative, transparent weighting of the evidence sources within the triangulation, placing more or less weight on each estimate according to its suitability and the level of confidence in the underlying evidence.

The following sections present the additional evidence and analysis in response to these recommendations, including estimate comparability, confidence and uncertainty, risk allowances and the basis for the triangulation approach.

6.4 Inclusion of Third-Party Estimates

We do not consider the exclusion of the independent third-party estimate appropriate as the only means of application in determining efficiency. Ofwat highlights that the third-party estimate shows materially higher estimates than the other cost sources and, due to the methodology stating its appropriateness for concept and early planning solutions, uniformly removes the third-party estimates from the triangulation. We disagree that the divergence of estimates from others is evidence of inefficiency and believe that the approach taken by Ofwat places greater weight on lower estimates without first establishing if those estimates are comparable in scope, maturity and uncertainty. All cost estimates derived for the Boreholes interventions are based on the same scope information that is at an early stage of development, with detailed design or site investigations not yet completed. Therefore, we believe all cost estimates and their assumptions are suitable given the current level of detail, and the third-party estimate should not be treated differently. The third-party estimate was not used in isolation and did not override other cost evidence. It was one input within a balanced triangulation approach designed to reduce reliance on any single uncertain source. Excluding it solely because it reflects a concept solution applies an inconsistent maturity test given that all the alternative cost estimates are also based on the same scope and early-stage assumptions. We find that other companies reference AACE Class 4 as typical uncertainty for projects at this stage of their lifecycle (), indicating that the third-party estimates provided are indeed appropriate and should not be excluded on this basis.

As is the case for our Trickle Filters submission, we typically try to utilise our internal cost models as the basis for cost, consistent with the approach taken in previous price reviews. However, we feel the triangulation for this submission is a reasonable and proportionate deviation from this approach for the Boreholes asset group, where major relining and redrilling activity are infrequent and the confidence in our internal cost models are low. The data limitations of our borehole cost models, as well as the comparison of unit costs to in-flight AMP8 schemes, reduces our confidence in our and the external Delivery Partner's costs being fully reflective of current, efficient delivery costs (submission *Table 14* and *Figures 18–19*). We therefore revised our cost estimation approach to use triangulation of a consistent, multi-source approach as we believed it would provide a better view of the plausible efficient cost range for this type of work.

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Through our external assurance process, this judgement on the use of multiple cost estimates was independently tested. The findings of which can be found in the external assurance report provided as part of the submission. Our assurance provider, , acknowledged that **"the robustness and efficiency of the costs have been a key focus of the assurance exercise"**. In summary, they found the triangulation approach and the resultant submission costs **"to be reasonable for this stage of project development"** as well as highlighted that taking the triangulation average was **"more reasonable"** than just using a singular basis like the limited UCD cost models. We believe Ofwat should give weight to this independent assurance when assessing the appropriateness of the costing approach taken.

Ofwat's conclusion that the independent third-party estimate is not comparable in confidence and reliability is not supported by a difference in the underlying scope. Across both the Boreholes and Trickle Filters submissions, each cost point was developed against the same defined intervention scope and intended Asset Health outcome or a broader specification that would justify treating it as inherently disproportionate. The fact that one estimate is higher or that the independent estimate is described as AACE Class 4 does not make it unequal to the other concept stage estimates. Rather, the spread between the cost points is the expected expression of uncertainty at this stage of the delivery process, before detailed site investigation, design development and construction planning have resolved site specific risks. Equal weighting is therefore a reasonable means of recognising the uncertainty with the Boreholes scopes and internal cost estimates and avoids selective reliance on the lowest estimates; removing the independent estimate suppresses the evidenced range without demonstrating that its scope or assumptions are invalid.

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Additionally, since original submission, we have received a tender price for one of the named borehole intervention schemes – the Delivery Partner price for the site of £1.52 million (incl. YW oncosts) is 37% greater than Yorkshire Water's original submitted cost (£1.11 million) and 70% above Ofwat's Draft Determination allowance (£0.89 million). This tender outcome provides validation that the range of costs identified through our triangulation approach, including revised UCD cost models (see Section 6.6.1) and the third-party estimates, reflect genuine delivery cost uncertainty rather than inefficiency. Given that this tender represents the most mature cost evidence currently available, it provides strong support for the reasonableness of our proposed costing approach and highlights the risk that the Ofwat Draft Determination allowances would not enable delivery of the proposed Asset Health outcomes.

6.5 Outlier analysis

To assess the robustness of the cost estimates and identify any potentially anomalous values, we have undertaken an outlier analysis across the cost benchmarks. Given the relatively small number of observations available for each asset class, we did not consider traditional interquartile range (IQR) methods to be appropriate, as these techniques can be unduly influenced by individual data points when applied to very small samples. Instead, we applied Dixon's Q-Test, which is a recognised statistical method designed specifically for small datasets. The test was undertaken on both the highest and lowest cost observations within each dataset for each site to identify potential upper and lower outliers. The analysis was performed separately for the Trickle Filters and Boreholes datasets, as well as on the aggregated totals, and assessed at 90%, 95% and 99% confidence levels.

The results can be found in [Appendix D](#) and indicate:

- That there were no lower-cost outliers within the Boreholes and Trickle Filters cost datasets.
- Only one data point is identified as an upper-cost outlier: the Delivery Partner cost associated with the trickle filters intervention.
- A further cost associated with borehole is identified as an upper outlier – but only at the lower 90% confidence threshold and is therefore not considered an outlier under the more robust 95% confidence assessment.

Consistent with standard statistical practice, we adopt the 95% confidence level for our assessment. This confidence level provides an appropriate balance between identifying genuinely anomalous costs and avoiding the inadvertent exclusion of valid data. As a result, for our Boreholes submission,

all data points were retained within the analysis, providing confidence that the resulting benchmarks are representative and supported by an objective and proportionate assessment of outliers.

6.6 Yorkshire Water Draft Determination Request

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Yorkshire Water requests that Ofwat increases the final Boreholes allowance from the £13.69 million originally submitted to **£16.31 million**, reflecting the updated cost evidence as follows:

- Reinstate the [redacted] borehole schemes, which Ofwat excluded as being out of scope (Section 4).
- Include the independent third-party estimates within the cost triangulation, rather than excluding them from the assessment of efficient costs.
- Update UCD cost models to improve cost confidence.
- Exclude Delivery Partner costs that are proven to be outdated and insufficient.

Since submission, further site investigation and detailed design has produced the first Delivery Partner tender price for one site proposed in the Asset Health Cost Change submission – [redacted] boreholes 3&4 (see [Appendix E](#)). This provides us with new cost evidence that is recent, reliable and the most mature. The Delivery Partner has returned a tender price = £1.52 million (incl. YW oncosts); this is 37% above Yorkshire Water's original submitted cost (£1.11 million) and 70% above Ofwat's Draft Determination allowance (£0.89 million), demonstrating that the original triangulation reflected genuine delivery uncertainty rather than inefficiency and that Ofwat's allowance would be insufficient to deliver the planned intervention.

We have therefore used this tender information and cost insight from [redacted], as well as additional AMP8 scheme tender and outturn information, to update our UCD models, discount the original Delivery Partner estimates, and update our cost triangulation ([Table 3](#)).

Table 3: Draft Determination Representation – Boreholes revised cost triangulation (£m)

Site	Revised YW UCD Cost (£m)	Delivery Partner Cost* (£m)	[redacted] Cost (£m)	TR61 Cost (£m)	YW DDR Average Cost (£m)
Content is redacted due to it containing commercially sensitive information or in the interests of security.	1.95	~~1.62~~	4.67	-	3.31
	1.07	~~1.08~~	1.40	-	1.52**
	0.41	~~0.54~~	1.36	-	0.88
	5.78	~~4.22~~	5.99	4.58	5.45
	1.89	~~1.41~~	2.67	1.29	1.95
	1.01	~~1.08~~	1.28	-	1.15
	1.48	~~1.08~~	2.61	-	2.04
Total	13.58	~~11.03~~	19.99	5.87	16.31

*Delivery Partner cost excluded from the average cost triangulation calculation

** [redacted] cost adjusted to actual tender costs from Delivery Partner ([Appendix E](#))

6.6.1 UCD Model Refresh

To address previously stated concerns on the accuracy and robustness of our borehole UCD cost models, we have implemented the addition of in-flight AMP8 borehole projects into the cost models. This approach incorporates the latest available outturn and tender cost information, adding to, or replacing, older datapoints to create a more representative and temporally correct model. As would be expected with any longstanding dataset with minimal data, the older and incomprehensive cost information was no longer reflective of prevailing construction, supply chain, inflationary and delivery conditions. The models have therefore been remodelled using the updated cost evidence to produce up-to-date, more robust and defensible cost estimates.

The following captured datapoints (**Table 4**) have been added to our civils borehole relining and borehole drilling datasets, using only activity costs associated with the civils intervention (refurbishment or drilling) to be consistent with the cost model description, and remodelled to produce refreshed cost models:

Table 4: Recent AMP8 datapoints applied to UCD cost models

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Whilst three of the four datapoints included in the refreshed models are Tender prices and not realised outturn, we have confidence that they are valid and adequately defined due to our current commercial framework; these schemes are following an NEC Option A contract, fixed price agreement. Therefore, the only means for costs to change from the agreed price is through formally agreed Compensation Events, from which the agreed tender costs would only increase. This evidences that the above tendered costs are efficient as they represent the minimum possible final outturn value.

The incorporation of the AMP8 scheme data into remodelled cost models has changed the count and temporal representation of the models, as shown in **Table 5**.

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The borehole drilling cost model (ZY2031) has been updated to incorporate two additional datapoints, increasing the underlying dataset to four observations. This addresses the limitations of the previous model, which was based on an insufficient sample size to provide a statistically robust evidence base. The inclusion of AMP8 scheme data has also extended the temporal coverage of the dataset by 10 years, improving its representation of current market conditions, delivery approaches and cost drivers. The borehole relining model (ZY2025) has undergone a comprehensive update to its temporal representation through the introduction of AMP8 data. The original model was based on four datapoints, three of which date to 2002/03. In line with our cost modelling data validation procedures, these old observations have been time expired and replaced with more recent AMP8 data, resulting in all four datapoints now spanning the period 2018/19 – 2026/27. While the overall number of datapoints remains unchanged, the updated dataset provides materially improved temporal coverage and better reflects current costs. Collectively, these enhancements provide a

more robust and representative basis for cost estimation and materially strengthen the reliability of the model for use in this submission.

The refreshed cost models improve the robustness of the UCD derived costs included in the Boreholes Asset Health submission. However, whilst the internal cost evidence has been strengthened, each model remains supported by a relatively limited sample of four datapoints, some of which are unfinalised tender costs. As such, the absolute accuracy of the models for the submission scheme scopes is not definitive and should not be considered as a sole estimation. Therefore, we retain our original methodology to propose realistic, efficient costs for the proposed Boreholes interventions by triangulating the internal cost model output with cost estimates from alternative sources.

The updated Boreholes scheme cost breakdowns using the refreshed UCD cost models can be found in **Appendix F**, with the resulting costs used in the revised triangulation shown in summary **Table 3**.

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6.6.2 New Tender Information and Exclusion of Delivery Partner Estimates

In receiving a delivery tender cost from a Delivery Partner for the relining scheme (**Appendix E**), we now replace the submission cost for this scheme with the actual price (**Table 3**). We have to utilise this cost otherwise it would create a material expenditure gap to deliver this scheme obligation, which would require the reallocation of funding intended for other Base programme activities.

In response to the availability of new tender cost evidence, we have revisited the cost evidence base underpinning the original requested costs and reassessed the validity of the sources included within the triangulation. As a result, the original Delivery Partner estimates have been removed from the revised triangulation, as they are no longer considered to provide a reliable representation of current efficient delivery costs. The original Delivery Partner estimate for was 41% lower than the subsequently received tender price from the same contractor, despite there being no material change in scheme scope. This variance illustrates the shortcomings of the original cost estimation approach, and improvement in costing maturity and known detail since the original estimate was prepared; for example, the tender now includes for cost increases for steel based on recently implemented tariffs by the UK government (1st July 2026). Furthermore, the updated UCD cost models (see Section 6.6.1) now incorporate the latest Delivery Partner tender information directly. Retaining the earlier Delivery Partner estimates within the triangulation would therefore duplicate the use of this underlying evidence and result in disproportionate weighting being applied to a single source of cost information. Excluding the original Delivery Partner estimates ensures that the revised triangulation is based on up-to-date cost evidence, avoids double counting, and provides a more robust basis for assessing the efficient costs of the proposed Boreholes interventions.

recommended that Yorkshire Water consider applying differential weights to the Boreholes cost evidence. We reviewed the Gough (2007) Weight of Evidence methodology suggested by but concluded that weighting would not improve robustness because the available estimates are all concept stage, based on limited evidence and do not provide a consistent, objective basis for scoring their relative reliability. Converting qualitative judgements on evidence quality, methodological fit and comparability into numerical weights would introduce unsupported subjectivity and could favour lower estimates without demonstrating that they are more representative of efficient delivery costs. We have therefore retained equal weighting in our triangulation as the most transparent and proportionate treatment of the evidence sources at this stage of scheme development.

6.6.3 Further Evidence for Efficient Submission Costs

Content is redacted due to it containing commercially sensitive information or in the interests of security.

Yorkshire Water are requesting a higher Boreholes allowance than the £13.69 million originally submitted. Both [redacted] and independent external assurance partner, [redacted], identified a case for applying optimism bias or an appropriate risk allowance, reflecting the limited historical evidence and the potential for scheme specific scope and delivery risks to emerge as the programme develops. [redacted] identified the material risk that concept stage estimates may omit scope that only becomes apparent through further investigation and design development:

“The proposed costs are the average of the internal and external cost benchmarks. We consider the approach to be reasonable. If anything, based on the higher cost of more mature base-funded borehole projects, we consider that there is a risk that costs exceed the proposed spend if significant site-specific issues affect delivery”

We have not applied a separate optimism bias or generic risk uplift. Instead, we consider that the revised triangulation appropriately captures these risks by incorporating updated internal cost models, retaining the independent third-party estimates and reflecting more mature scheme evidence. The resulting increase is therefore a robust, evidence-based assessment of efficient delivery costs rather than an additional contingency.

To provide additional context on the potential range of delivery costs with the outline Boreholes intervention scopes included within this submission, we have explored and considered recognised approaches for assessing optimism bias and cost uncertainty at early stage of project development. This analysis is not intended to redefine the requested costs but to illustrate the potential upper range of costs that could reasonably arise as project scope, design, procurement and delivery mature.

1. The first approach considered is the HM Treasury Green Book optimism bias methodology¹. This recognises a systematic tendency for early-stage projects to underestimate costs, schedules and risks. It recommends the application of a standard average uplift derived from historical project performance to account for this tendency. For civil engineering projects, which is applicable to these Boreholes schemes, the Green book provides indicative capital cost uplifts to be applied to base estimates (with consideration of optimism bias reduction through management of contributory factors).
2. The second approach is Reference Class Forecasting (RCF) developed by Oxford Global Projects. RCF compares a proposed project against the observed outcomes of a large sample of comparable major projects. The methodology uses empirical evidence of historical cost performance to estimate the probability distribution of likely outturn costs and calculate appropriate uplifts for different project maturity and confidence levels. Yorkshire Water have previously commissioned Oxford Global Projects to build reference classes specific to water industry assets, therefore we have an RCF tool that is explicitly applicable to our project and programme planning – the RCF context and methodology can be found in [Appendix G](#).

We have applied the two optimism bias methodologies to our original Boreholes Asset Health submission costs:

- Green Book approach: using the ‘Non-standard civil engineering’ classification and applying upper bound (+66%) estimation renders a total Boreholes programme cost = £22.72 million.

¹ [Green Book supplementary guidance: optimism bias](#)

- OGP RCF approach: using the Strategic Outline Case @ P65 confidence, a +89–94% uplift is applied to each borehole intervention scheme (based on individual RCF profiles mapped to UCD cost models), equating to a total upper bound estimate = £25.84 million.

The results demonstrate that, for the Boreholes projects at the current stage of development, delivery costs may reasonably exceed central cost estimates as project definition advances and residual uncertainties are resolved. Both methodologies indicate that there remains a material range of potential outturn costs above the estimates used within the submission.

Reassurance that these upper bound calculations do not materially overstate likely costs is provided by comparison to the recently received tender for (£1.52 million). This tender represents the most mature and real cost evidence currently available for the programme and therefore provides an important benchmark against which the optimism bias assessments can be considered. The tender cost is 21% lower than the cost derived using the Green Book approach applied to the original submitted costs – crudely applying the same relationship to the wider Boreholes programme would indicate a notional programme cost of £18.77 million. This means that if the cost materialised at is representative of the rest of the Boreholes schemes, the potential cost required to deliver the Asset Health programme remains materially above the Yorkshire Water revised DDR submission total cost of £16.31 million. This is further evidence that our revised submission costs are efficient and proportionate.

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We are not seeking funding based on these upper bound levels. However, the analysis provides important context regarding the uncertainty inherent in costing intermediately defined scopes of civil works. The analysis illustrate that the costs presented within our revised submission are within and well-below the upper bounds indicated by the optimism bias forecasting methodologies (*Figure 3*).

Figure 3: Boreholes programme cost comparison (£m)



Also shown in the Boreholes cost comparison *Figure 3*, Yorkshire Water's revised DDR request, including the updated triangulation, remains below the average unit rate per borehole allowed by Ofwat across companies at the Draft Determination. This demonstrates that the revised £16.31 million request remains comparatively efficient, despite incorporating a transparent allowance for the upward cost pressure evidenced by more mature tender information. The request is therefore

supported by both sector benchmarking and scheme specific delivery evidence, rather than representing an excessive or inefficient cost uplift.

Ofwat state in their assessment guidance (dated December 2025, Section 3.4.3, pg16) that ***“the proposed costs should be reflective of actual delivery costs”***. We believe the evidence outlined in this section provides clarity that the required actual costs to deliver the proposed schemes are much higher than Ofwat’s DD allowances.

Requested Amendment

Yorkshire Water requests that Ofwat increase the final Boreholes allowance to **£16.31 million**, based on the revised triangulation incorporating updated cost evidence.

7. Yorkshire Water's Comparative Treatment on Cost Efficiency

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industry review ([Appendix B](#)) found no material difference between the types of cost evidence used by Yorkshire Water and those relied upon by other companies. However, despite Yorkshire Water providing historical and bottom-up evidence, external benchmarks, supply chain inputs, independent assurance and formal triangulation, Ofwat applied materially larger reductions to Yorkshire Water's Boreholes and Trickle Filters allowances than to comparable submissions. The review therefore raises a substantive concern that the evidential threshold and treatment applied to Yorkshire Water was not transparent or consistent with that applied across the sector.

The findings from the report are outlined below:

- **Comparable evidence base:** companies used varied combinations of historical costs, bottom-up estimates, partner or supply chain evidence and external benchmarks; Yorkshire Water's use of multiple sources was comparable to the industry.
- **Internal evidence is common source of cost:** other companies' costs were accepted where internal cost evidence was supported by delivery data, with external benchmarks used mainly as validation rather than as an automatic substitute for company estimates.
- **Yorkshire Water provided a broad evidence set:** its submissions included internal and external benchmarks, independent assurance and, for Boreholes, formal triangulation – a feature not consistently present in comparator submissions.
- **Lower benchmarks do not prove inefficiency:** differences in complexity, assumptions, risk coverage and local delivery requirements mean that a lower external estimate is not, by itself, evidence that Yorkshire Water's costs are inefficient.
- **Outcomes appear disproportionate:** received no adjustment despite relying on fewer evidence types or facing similar evidential concerns, whereas Yorkshire Water received reductions of 19.8% for Boreholes and 26.0% for Trickle Filters.

Table 6 summarises the evidence submitted by companies for the 2026 Boreholes and Trickle Filters Cost Change process. Economic Insight's cross-company comparison highlights inconsistent evidential thresholds and outcomes.

Table 6: Company submitted cost evidence (source: Economic Insight)

Asset	Company	Historical costs	Bottom-up	External benchmark	Supply chain quotes	Competitive evidence	Independent assurance	Ofwat cost efficiency outcome
Boreholes	Content is redacted due to it containing commercially sensitive information or in the interests of security.	Yes	No	Yes	No	No	Yes	Pass 0%
		Yes	Yes	Yes	Yes	No	Yes	Pass 0%
		No	Yes	No	Yes	No	Yes	Conditional 20% reduction
		No	Yes	Yes	No	No	Yes	Pass 0%
		Yes	Yes	Yes	Yes	No	Yes	Partial pass 19.8% reduction
		Yes	Yes	Yes	Yes	Yes	Yes	Pass 0%
Trickle Filters		Yes	Yes	Yes	No	No	Yes	Pass 0%
		Yes	No	No	No	No	Yes	Conditional 10% reduction
		Yes	Yes	Yes	No	No	Yes	Pass 0%
		Yes	Yes	Yes	Yes	No	Yes	Partial pass 26.0% reduction

In reference to the Trickle Filters Draft Determinations, we believe there are inconsistent outcomes given the cost evidence presented and approaches taken – a specific example being

outcome compared to Yorkshire Water's. Ofwat's Draft Determination notification finds that both companies provide sufficient and robust costing methodology by using historical delivery data in established cost models.

argue that efficiency is demonstrated through using this methodology, which is consistent with previous business plan approaches – Yorkshire Water also made this argument in our submission. However,

do not provide any external benchmarking evidence at all and solely rely on their internal cost estimates. Despite relying on only one source, Ofwat have provisionally determined **"if this evidence is not provided, we may apply a 10% cost efficiency challenge at final determination"**. Whilst we have sought multiple additional benchmarks, albeit not using them in final submitted costs as deemed inconclusive (see Section 5), we have received a much more significant efficiency reduction from Ofwat (26.03%). We do not think this is consistent; the reductions are not proportionate given the costing evidence provided in each submission. By following the assessment guidance and obtaining cost benchmarks and making them available to Ofwat, we have been effectively disadvantaged in our outcome. If in contrast had we not obtained external benchmarks and relied solely on internal cost estimates, our conditional reduction may have been materially lower.

Table 7: Triangulation approach used in Asset Health Cost Change claims (source: Economic Insight)

Asset	Approach	Content is redacted due to it containing commercially sensitive information or in the interests of security.						
Boreholes	Triangulation across evidence sources	No	No	No	N/A	No	Yes	No
Trickle Filters		No	N/A	N/A	No	No	No	N/A

We apply triangulation of costs within our Boreholes submission as a means of accounting for uncertainty in internal cost estimation. Ofwat agreed with this approach as part of the Draft Determination. **Table 7** shows that this was the only application of this approach for all Borehole and Trickle Filter submissions across the industry. However, Ofwat also apply triangulation to Yorkshire Water's Trickle Filters submission despite our evidence that this is not appropriate for that case. We feel that Ofwat's decision to use triangulation for our Trickle Filters proposal is not consistent with industry application (as per **Table 7**), nor is it consistent with Ofwat's determinations across other companies – where we find no reference or use of triangulation to determine other companies approved costs.

Requested Amendment

Yorkshire Water request that Ofwat reassesses the Boreholes and Trickle Filters cost efficiency on a transparent and consistent basis.

8. Summary of Requested Cost Amendments

Table 8 summarises Yorkshire Water's requested cost amendments by scheme and asset group, comparing the original submission, Ofwat's Draft Determination allowance and Yorkshire Water's revised Draft Determination response request, together with the resulting difference to Ofwat's allowance.

Table 8: Summary of original and final submission costs for Boreholes and Trickle Filters

Name of Community or Original and Initial Submission Costs For Boreholes and Trickle Filters						
Asset Group		Scheme / Site	Original Submission (£m)	Ofwat DD (£m)	YW DDR Request (£m)	Difference to DD (£m)
Trickle Filters	Content is redacted due to it containing commercially sensitive information or in the interests of security.		13.16	9.74	13.16	+3.42
			6.26	4.63	6.26	+1.63
			0.77	0.57	0.77	+0.20
			0.44	0.33	0.44	+0.11
			0.53	0.39	0.53	+0.14
			4.45	3.29	4.45	+1.16
Trickle Filters Total			25.61	19.92	25.61	+5.69
Boreholes	Content is redacted due to it containing commercially sensitive information or in the interests of security.		2.51	2.01	3.31	+1.30
			1.11	0.89	1.52	+0.63
			0.74	0.59	0.88	+0.29
			4.90	3.93	5.45	+1.52
			1.74	0.00	1.95	+1.95
			1.06	0.85	1.15	+0.30
			1.64	0.00	2.04	+2.04
Boreholes Total			13.69	8.27	16.31	+8.04
Combined Programme			39.30	28.19	41.92	+13.72

9. Appendices

9.1 Appendix A

Content is redacted due to it containing commercially sensitive information or in the interests of security.

Document Type	Document Reference
Report	<i>YWS - Appendix A - Draft Determination Report.pdf</i>

9.2 Appendix B

Document Type	Document Reference
CCP26-YKY-IBQ-003	<i>YWS - Appendix B - CCP26-YKY-IBQ-003.docx</i>

9.3 Appendix C

Document Type	Document Reference
Northallerton STW ASP scheme outturn cost data	<i>YWS - Appendix C - YW001353_AMP6 Northallerton STW ASP_Data Capture.xlsx</i>

9.4 Appendix D

Document Type	Document Reference
Dixon's Q-test outlier analysis	<i>YWS - Appendix D - Cost Summary_Qtest.xlsx</i>

9.5 Appendix E

Document Type	Document Reference
Delivery Partner Tender Cost – Etton Wold BH Scheme	<i>YWS - Appendix E - Etton Wold - Tender Costs - .xlsx</i> <i>Please note that the tender cost is supported by a detailed bottom-up bill of quantities. However, due to commercial sensitivity, the underlying items have not been included.</i>

9.6 Appendix F

Document Type	Document Reference
Borehole YW Unit Cost Database: Cost Breakdown	<i>YWS - Appendix F – Asset Health Cost Change_Boreholes_Cost Breakdown_model refresh.xlsx</i>

9.7 Appendix G

Document Type	Document Reference
Oxford Global Projects – Reference Class Forecasting Methodology	<i>YWS - Appendix G – Oxford Global Projects Reference Class Forecasting – Main Report 020726.pdf</i>