

**WSX09 -
Annexes - Base
cost adjustment
claims**

June 2023 early
submission



Wessex Water
YTL GROUP

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CAC4 – Catchment management and nature-based solutions

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This supporting document is part of Wessex Water's business plan for 2025-2030.

More information can be found at [wessexwater.co.uk](https://www.wessexwater.co.uk)

A1 Catchment- and nature-based solutions

A1-1. Introduction to the claim

A1-1.1. Overview of the claim

This early cost adjustment claim submission relates to funding for efficient operating expenditure relating to the continuation of pre-AMP8 catchment- and nature-based solutions (C&NBS).

- In relation to the water resources price control, the claim is for efficient operating expenditure for the continuation of pre-AMP8 C&NBS to improve raw water quality in a context where Ofwat's cost models are specified in a way that remunerates the costs of addressing raw water quality deterioration via increases to water treatment works complexity rather than solutions that apply before water reaches the treatment works.
- In relation to the wastewater network plus price control, it relates to the efficient operating expenditure for the continuation of AMP7 C&NBS to reduce nitrates and phosphorus in catchments.

This document is to be read alongside the completed data tables for this early cost adjustment claim. This document provides supporting information in line with Ofwat's assessment criteria for cost adjustment claims as set out in Appendix 9 of the PR24 final methodology. This section is structured in line with Ofwat's assessment criteria for cost adjustment claims.

While we have included a cost adjustment claim for the ongoing operating expenditure of pre-AMP8 C&NBS, we do not consider that Ofwat's standard cost adjustment process is well-suited in this case and we would favour a separate remuneration process for these costs. Indeed, Ofwat has recently proposed an alternative funding arrangement for the ongoing operating expenditure for phosphorus removal (which is relevant to part of this claim), but this has yet to be confirmed. Our view is that Ofwat's standard cost adjustment process poses unnecessary risks of disincentivising C&NBS and innovative alternatives to conventional capex-intensive enhancement solutions because it does not provide the certainty that companies should be able to expect when choosing the most efficient solution. We have discussed this with Ofwat on several occasions and proposed alternative approaches to Ofwat that we do not repeat here for the sake of brevity.

A1-1.2. Scope of costs covered by this claim

This claim covers the efficient operating costs for the continuation of pre-AMP8 C&NBS.

- Costs associated with schemes that target raw water quality deterioration pertain to the water resources price control.
- Costs associated with schemes that address river water quality (phosphorus and nitrate removal through C&NBS) pertain to the wastewater network plus price control.

The set of catchment management schemes included within this claim relating to the water resources price control cover:

- Pre-AMP8 C&NBS that we expect to continue broadly unchanged into the AMP period.
- Pre-AMP8 C&NBS that we expect to continue into AMP8, but for which we plan to adopt a new and higher cost approach agreed with the Environment Agency in AMP8. These schemes will be used in catchments that face a particularly high risk from nitrates.

Tables 4 and 5 in section A1-2.51 set out a full list of these schemes. We have taken a decision on proportionality grounds to not include within this early claim submission a relatively small amount of opex associated with schemes affecting other price control areas (i.e. bioresources).

A1-1.3. Summary of claim value (provisional)

The gross and net values of the claim are summarised in the table below. These figures are based on current estimates and forecasts. We plan to update the valuation of the claim as part of our PR24 business plan.

Table 1 Summary of the net value of the claim (provisional) for water resources (2022/23 prices)

	2025/26	2026/27	2027/28	2028/29	2029/30
Gross value of the claim (£m)	£2.336	£2.336	£2.336	£2.336	£2.336
Implicit allowance (£m)	Zero	Zero	Zero	Zero	Zero
Net value of the claim (£m)	£2.336	£2.336	£2.336	£2.336	£2.336

Table 2 Summary of the net value of the claim (provisional) for wastewater network plus (2022/23 prices)

	2025/26	2026/27	2027/28	2028/29	2029/30
Gross value of the claim (£m)	£4.672	£4.672	£4.672	£4.672	£4.672
Implicit allowance (£m)	£0.01	£0.01	£0.01	£0.01	£0.01
Net value of the claim (£m)	£4.662	£4.662	£4.662	£4.662	£4.662

A1-1.4. We are not proposing a symmetrical cost adjustment

We are not proposing that Ofwat makes a symmetrical cost adjustment across the industry as part of this claim. This claim relates to Wessex Water's ongoing opex associated with current C&NBS. We did not identify a good basis for making material adjustments across the industry.

Instead, we propose that, if Ofwat accepts this claim, it might consider action to exclude, where possible, the historical operating expenditure attributable to the activities covered by this claim (at least for Wessex Water) from the scope of modelled costs *input data* feeding into its econometric models of base costs. This would be a proportionate step to tackle concerns of potential double counting across the industry. It may benefit from further information requests from companies.

This might be a similar approach to that which Ofwat would take under its proposals to provide a separate remuneration channel for the ongoing costs of phosphorous removal. While the details of that approach are not yet known, Ofwat may decide to exclude operating expenditure identified with phosphorous removal from its scope of modelled base costs.

A1-2. The need for a cost adjustment

This section sets out our response to Ofwat's "need for a cost adjustment" criterion. We first set out some contextual information on the need for a cost adjustment. We then address each question that Ofwat has listed under this criterion.

A1-2.1. Context for the cost adjustment claim

In Appendix 9 of its final methodology statement, Ofwat recognised the need to provide a level playing field between traditional and non-traditional solutions (i.e. nature-based and catchment solutions that primarily involve *ongoing* operating expenditure).

In relation to new enhancement schemes for AMP8, this would involve setting ten-year ongoing operating expenditure allowances (with the potential for companies to apply for further funding at the end of the ten-year period).

Ofwat also recognised that its base cost models may not provide funding for the continuation of schemes that were initiated in previous AMPs. Specifically, Ofwat said that companies may submit cost adjustment claims where they consider that the base cost models are "*unlikely to provide sufficient funding for catchment- and nature-based solutions allowed for in previous price reviews*". This early cost adjustment claim sets out Wessex Water's request for a cost adjustment to fund such schemes.

Wessex Water began implementing C&NBS in 2005. These solutions involve working with local farmers and landowners within catchment areas to reduce nutrient levels in raw water sources and rivers. Our catchment management objective is to stabilise and then reduce the levels of contaminant at each source to reduce the complexity of treatment required at our water treatment works as well as to improve the quality of river water.

Through this early cost adjustment claim submission, we are seeking funding for the continuation of catchment management schemes, for which funding is not reflected in the cost models, that we have categorised into two broad areas:

- Schemes that address raw water quality deterioration in our surface and ground raw water sources. The costs associated with these schemes are considered part of the water resources price control area.
- Schemes that aim to improve river water quality by reducing nutrient levels (particularly phosphates and nitrates) at source. The costs associated with these schemes are considered part of the wastewater network plus price control area.

We provide some background information relating to these schemes below, and more details including costs on the section on adjustment to allowances.

A1-2.1.1. Addressing raw water quality deterioration in surface and ground water sources through catchment management

Each of our surface and groundwater catchments have been designated as drinking water safeguard zones (SGZ) by the Environment Agency. Within these zones, specific substances must be managed carefully to prevent the pollution of raw water sources that are used to provide drinking water.

The water that flows into our surface water reservoirs comes from a number of sources over many miles, but it can become polluted by nutrients, pesticides and other chemicals on its way. The main water quality issue in our groundwater catchments is high and rising levels of nitrate, caused predominantly by intensive agricultural activities.

The more pollutants in our reservoirs and groundwater sources, the more complex our treatment processes need to be. The traditional methods to address raw water quality issues involve capital-intensive upgrades to our treatment works. Catchment management and nature-based solutions offer an alternative that is cost-effective and is better for the environment. These solutions involve partnering with local stakeholders, including local authorities, regulators and farmers in the catchment areas of public water supply boreholes and reservoirs.

We work with the farmers within the catchment areas to reduce the risk of pollution and support changes that will have a positive impact on water quality and the wider environment. This includes:

- raising awareness of surface water quality issues;
- sharing the results of water, soil, crop and manure testing that we have carried out for farmers;
- providing advice and information about ways of improving the efficiency of how their crops use key inputs, such as fertilisers and pesticides; and
- supporting farmers to adopt alternative practices to protect water, such as establishing buffer strips to prevent soil and pesticides from washing into watercourses.

The methods we use include sharing data, providing expertise and advice, and offering practical help and compensation, where applicable. As a result of this work, we've not had to install new treatment upgrades at any of the sites where we engage in catchment management.

Case study: Durleigh

Durleigh is a surface reservoir in the western area of our supply region which supplies water to Bridgwater and the surrounding area. The treatment works for the reservoir includes granular activated carbon (GAC) which is effective in removing most of the pesticides that enter the reservoir from the farmland in the catchment. However, the plant is not effective in removing metaldehyde, a widely used molluscicide which passes through GAC, so the source had to be shut down in 2008 when a large spike of metaldehyde entered the reservoir. It remained switched off for four months between September and December 2008 and the only way to remove the metaldehyde was to drain the reservoir and allow it to refill naturally with cleaner water from the catchment.

Treatment options were investigated but given the difficulty of removing metaldehyde we decided to tackle it using catchment management – active catchment management began at Durleigh in October 2008.

We sent a letter to all the catchment farmers explaining the situation and requesting their cooperation with our catchment adviser and followed this with joint visits to the catchment together with the Environment Agency (EA). Catchment water samples were taken and the results shown to the farmers. Their response was exemplary to the extent that one farmer, whose fields had been shown to be contributing significantly to the 2008 incident, voluntarily switched to a different, more expensive molluscicide.

In recognition of the goodwill and effectiveness of this action, we agreed to contribute financially to all catchment farmers who made the switch to non-metaldehyde based slug treatments. Catchment management continues at Durleigh through a mixture of catchment sampling, farm visits and a regular newsletter sent out jointly from the EA and ourselves. In addition to natural inflows from the catchment, we can also pump water into the reservoir, from

the River Tone via the Bridgwater and Taunton Canal, to top it up during autumn. The use of the canal at this time is a balance between the need to refill the reservoir and avoiding the transfer of any contaminant into it from the very large River Tone catchment where no catchment management takes place.

Since the start of active catchment management there has been only one incident of metaldehyde exceedance in the reservoir and this occurred in October 2014 when significantly elevated metaldehyde levels occurred in the River Tone as the canal was being pumped. The volume of water pumped before sample analysis confirmed the metaldehyde contamination was enough to push the raw reservoir water over the limit. Fortunately, the success of catchment management in minimising metaldehyde within the natural reservoir catchment meant that once the canal pump was switched off, the natural catchment inflows were able to dilute the raw reservoir to the extent that there was no interruption to supply. Although unfortunate, this event provided further indication of the difference that our active catchment management makes.

Case study: Eagle Lodge

Eagle Lodge is a groundwater source supplying the Dorchester area. The water from the boreholes failed the nitrate standard several times between 1999 and 2001 and we are required by the Drinking Water Inspectorate (DWI) to ensure and maintain compliance with regard to nitrate. A nitrate removal plant was planned and designed for Eagle Lodge in 2004 but the high construction and running costs of such a plant, and the need for additional land to build it on, led us to look at a catchment management option for the source.

Our catchment management started in 2005 and followed a series of dry winters when nitrate peaks regionally had been lower than in previous years. The objective was to optimise nitrate inputs in the catchment to the extent that under high groundwater situations nitrate peaks remained below the nitrate standard.

Our catchment adviser made contact with the catchment farmers, explained the nitrate problem to them, obtained farm records, identified specific issues and developed a good working relationship. This allowed the adviser to suggest changes in farming practice including:

- *improved nutrient and manure management*
- *calibration of fertiliser spreaders*
- *altered drilling dates of autumn sown crops*
- *use of winter cover crops and the adoption of resource protection measures under environmental stewardship.*

Many farmers took up these options assisted, between 2005 and 2008, by a jointly funded European project, the Water Resources Management in Cooperation with Agriculture (WAgriCo). Since 2006, with a return of some wetter winters, there have been some nitrate peaks, but below the drinking water standard limit and well below the levels seen before catchment management began.

A1-2.1.2. Improving river water quality through catchment management

In addition to avoiding the need for complex water treatment at our treatment works, our catchment management activities have a significant beneficial impact on river water quality and the downstream environment. We are currently undertaking the following schemes in this area.

Phosphorus reduction at Rivers Stour, Tone, Parrett and Yeo

Wessex Water is working with farmers in sub-catchments of the Rivers Stour, Tone, Parrett and Yeo to reduce phosphorus (P) run-off from farmyards, tracks and fields. This P offsetting initiative forms part of a wider programme of water company investment where P removal is being installed at our water recycling centres (sewage treatment works) across the catchment.

- *This programme has already resulted in approximately six tonnes less P entering the River Stour each year and by 2025 around a further 190 tonnes will have been removed in this way.*
- *By 2020 this programme had already resulted in approximately 85 tonnes less P entering the Rivers Tone, Parrett and Yeo each year and by 2025 around a further 60 tonnes will have been removed in this way.*

In rural catchments such as these, wastewater treatment is only one source of P to the river, with agriculture being the other main contributor. By working with farmers to reduce P loadings from agriculture, the overall improvement in river water quality will be greater than if only P loadings from wastewater treatment are reduced.

Poole Harbour nitrogen offsetting schemes

Agriculture contributes to 66% of the nitrogen that enters Poole Harbour compared to the 12% that comes from our water recycling centres (WRCs). We are using catchment management since 2015/16 with the aim of reducing the amount of nitrogen entering Poole Harbour by 40 tonnes per year by 2020 through working with local farmers. We achieved this goal in 2016/17 preventing 60.4 tonnes of nitrogen from entering the harbour. For the five years that followed, we continued to surpass this target.

By working with farmers in the catchment, we have been able to invest in agricultural measures that reduce nitrate leaching and provide wider environmental benefits, such as biodiversity improvements. The alternative, installing nitrate removal plants at WRCs, only deals with nitrate and doesn't deliver wider environmental benefits. It would also be far more expensive, in addition to releasing significant quantities of carbon into the environment.

We work with the farmers in a targeted area of the Poole Harbour catchment to:

- *identify and raise awareness of water quality issues*
- *share the results of water, soil, crop and manure testing that we have carried out for them*
- *provide advice and information on ways to improve the efficient use of key inputs*
- *compensate farmers (where appropriate) for adopting alternative practices.*

A1-2.1.3. Ofwat's PR24 approach does not adequately fund pre-AMP8 enhancements that involve catchment management and nature-based solutions

Working with Anglian Water and United Utilities, we commissioned a report in 2022 from the consultancy Reckon, which gave particular attention to the regulatory treatment of nature-based solutions and operating expenditure associated with enhancement activities.¹ Reckon's report sets out how Ofwat's PR19 approach creates a bias in favour of enhancement initiatives that involve a relatively high proportion of capital expenditure rather than operating expenditure (see section 3.2 of the Reckon report).

Ofwat's final methodology for PR24 recognised these risks and proposed changes to its PR19 methodology for PR24. Ofwat's proposed changes are welcome and go some way towards addressing the bias against opex-heavy enhancements. However, these changes are not sufficient and, in any event, do not apply to enhancements that were undertaken before the start of AMP8.

In the rest of this section, we set out the reasons that Ofwat's PR24 approach does not adequately fund our pre-AMP8 catchment management and nature-based solutions. Taking each in turn, we consider the problems relating to the water resources price control and the wastewater network plus price control.

¹ The opportunities for a more coherent regulatory approach for Ofwat's funding of base expenditure and enhancements, Reckon LLP (sponsored by Anglian Water, United Utilities and Wessex Water)

Schemes costs reported within water resources

Opex relating to schemes that primarily address raw water quality deterioration in surface and ground water sources through catchment management and nature-based solutions are reported within the water resources price control.

As reported in the previous section, our approach of managing the deterioration of raw water quality through such non-traditional methods has meant that we were able to avoid capital-intensive upgrades to water treatment works across all catchment areas where we operate these schemes. This has led to significant cost savings for our customers compared to the cost of treatment works upgrades.² These catchment solutions also offer environment benefits that treatment upgrades cannot.

We recognise that we have achieved significant efficiencies in water treatment costs as a result of catchment management. However, Ofwat's proposed PR24 base cost models are specified in a way that explicitly penalises companies that prioritise catchment management and nature-based solutions over capital-intensive treatment upgrades.

Ofwat's April 2023 modelling consultation proposes to include within its wholesale water models explanatory variables relating to treatment complexity. Specifically:

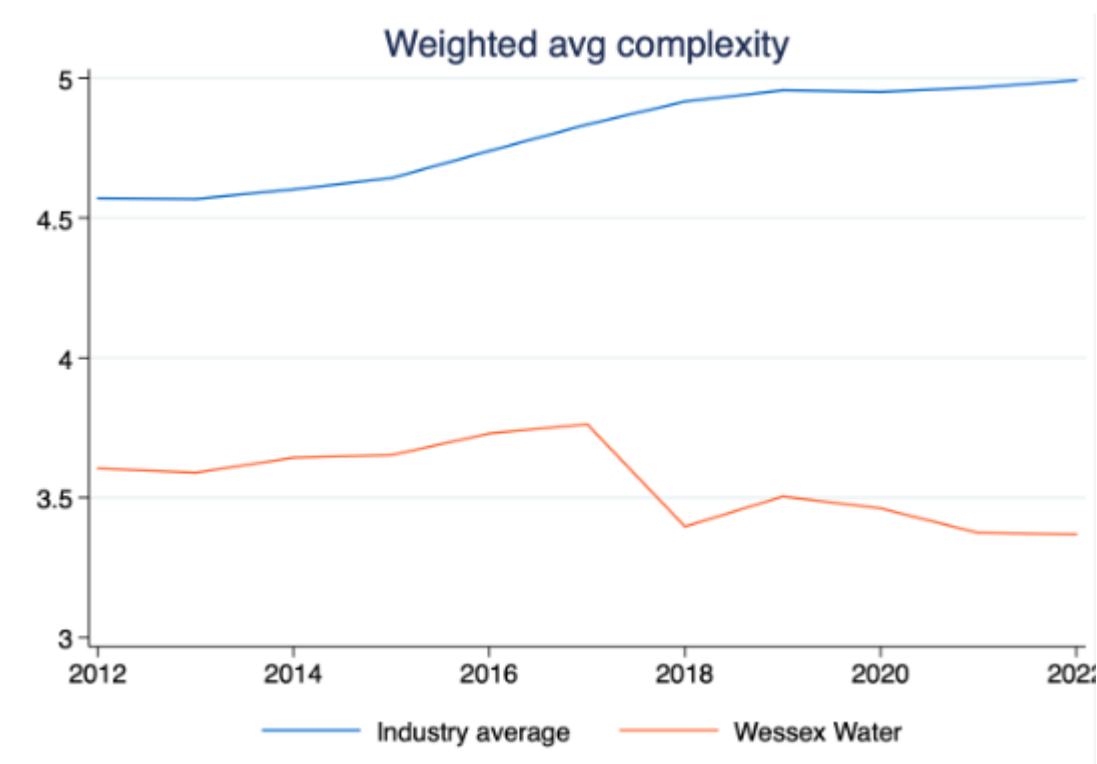
- The “*proportion of water treated at complexity levels from 3 to 6*” variable is used in three out of six water resource plus models and six out of twelve wholesale water models.
- The “*weighted average treatment complexity*” variable is used in the remaining water resource plus and wholesale water models.

While these variables do capture some differences between companies in the efficient cost of water treatment, these variables have the effect of remunerating treatment works upgrades but not catchment management solutions or other initiatives that improve the quality of water before it reaches the treatment works.

The chart below shows the evolution of the weighted average treatment complexity variable over the period covered by Ofwat's April 2023 models (i.e. 2011/12 to 2020/21), comparing the industry average to Wessex.

Figure 1 Evolution of the “weighted average treatment complexity” variable over time (Wessex vs Industry average)

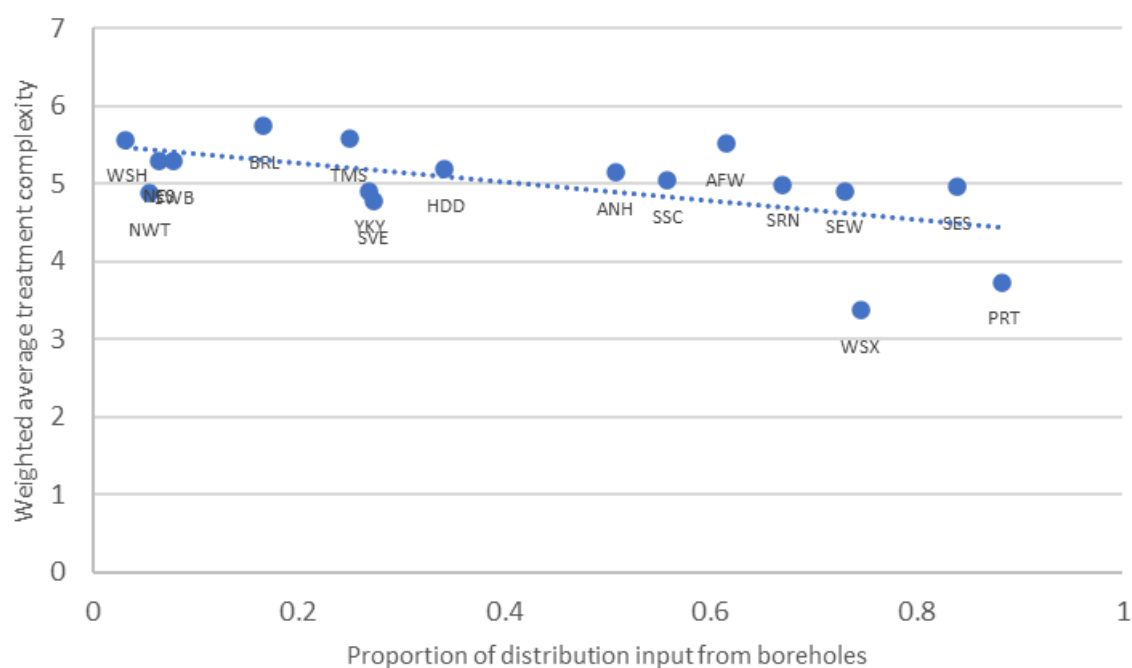
² Our estimates show that catchment management solutions costs, are on average across our catchments, only 12% of the costs of treatment works upgrades that deliver equivalent benefits (in NPV terms).



The chart shows that there has been a material reduction and a downward trend in Wessex Water's weighted average treatment complexity variable, at the same time as a material upward trend in the same variable on average in the industry as a whole.

At the same time, we consider that this reduction in Wessex Water's weighted average treatment complexity has made it an outlier compared to the rest of the industry, even controlling for the fact that most of our raw water comes from groundwater sources (i.e. boreholes). The chart below shows the weighted average treatment complexity across the industry plotted against the proportion of that company's distribution input that comes from boreholes. Wessex is a clear outlier in terms of its low treatment complexity, and our investment in developing catchment management and nature-based solutions is the main driver for this.

Figure 2 Weighted average treatment complexity, controlling for proportion of distribution input from boreholes (all data from 2021/22)



Given that the coefficient on the treatment complexity term in Ofwat's models is positive (as expected), a reduction in the weighted average treatment complexity variable would lead to a reduction in the predicted base costs based on those models. This means that companies such as Wessex Water that seek to use catchment management over treatment works upgrades face the prospect of *lower* base cost allowances every time they implement such a scheme that successfully leads to improvements in raw water quality.

A key feature of our claim is not just that we have implemented catchment management solutions but that these have been successful in limiting the *upfront* and *ongoing* costs that customers pay.

We accept that some operating expenditure relating to catchment management and nature-based solutions may be included in Ofwat's modelling (to the extent that they are reported within base costs). We do not have data reported at a sufficiently granular level across the industry to be able to estimate the size of any implicit allowance arising from this inclusion. However, we consider that any implicit allowances are likely to be more than offset by the reduction in allowances through the treatment complexity variable (assuming that this variable appropriately captures the cost of upgrading treating works, and given our finding that the NPV of catchment management costs are just 12% of the cost of treatment works upgrades) compared to a counterfactual where we had implemented a treatment complexity solution. This feature of Ofwat's models acts as a material deterrent to non-traditional solutions to raw water quality deterioration in a way that is inconsistent with Ofwat and Government policy objectives. Furthermore, it would mean that Ofwat's approach to base cost assessment could fail to properly remunerate companies who have in the past adopted successful catchment management initiatives in the past.

We therefore believe that if Ofwat were to use its April 2023 models for draft and final determinations, a cost adjustment is required to ensure that Wessex Water is appropriately funded for its catchment management activities. Further details about our proposed adjustment are set out in [section A1-2.5].

Schemes costs reported within wastewater network plus

We now turn to consider C&NBS on the wastewater side of the business.

We include opex relating to schemes that primarily address river water quality through C&NBS within the sewage treatment and disposal activity area within the wastewater network plus price control.

Ofwat's April 2023 modelling consultation said that:

"We recognise that the additional ongoing cost associated with more stringent phosphorus removal programmes across the sector may not be fully captured in our proposed base cost models. We are exploring alternative options to ensure that our cost assessment approach funds efficient ongoing P removal costs, which we welcome company views on:

- We will continue to consider models with a P-driver (eg percentage of load with a Ppermit \leq 0.5mg/l) fixed at the 2024-25 level. This will have the impact of funding the additional base expenditure associated with phosphorus removal enhancement schemes funded at PR19 and completed by the end of AMP7.*
- We are considering whether we can calculate an accurate post-modelling adjustment that funds efficient ongoing opex associated with P-removal using data provided by companies in annual performance reports (APRs).*
- The cost adjustment claim process."*

At this stage of the process, we do not know which of these approaches will be adopted for draft and final determinations. In the event that Ofwat chooses to rely on the cost adjustment claim process, we consider that the costs included within this early claim submission would qualify.

Wessex Water's phosphorus and nitrate removal catchment management schemes are at the forefront of industry efforts to address the quality of the natural environment downstream of wastewater treatment works. In a 2018 report, the House of Commons Environmental Audit Committee specifically referred to schemes operated by three water companies in England (including Wessex Water) in its discussion on the use of catchment management schemes to reduce nitrate concentrations in river water.³

"Water companies told us that they were focusing on catchment management as contained within the RBMPs and engaging with the agricultural community, the Environment Agency, Natural England and independent agricultural advisers. This was because working in collaboration they could support initiatives which could tackle nitrate pollution at source rather than dealing with it downstream by way of expensive nitrate removal and water blending plants. Anglian Water told us that this approach delivers cleaner water but also other wider benefits such as biodiversity, amenity and habitat. Wessex Water, Yorkshire Water Services, and Anglian Water told us they have been helping farmers fund measures such as using cover crops during the winter to retain nitrogen and protect soils and had their own teams of advisers to help farmers ensure that where possible they could make decisions that reduced or mitigated nitrate and other forms of pollution."

In its April 2023 modelling consultation, Ofwat has proposed to include within its wastewater network plus models a subset of enhancement operating expenditure reported since the start of AMP7, including that relating to nitrogen and phosphorus removal. To the extent that companies report costs against these expenditure lines, Ofwat's models could be seen as providing some implicit allowances for the ongoing costs of these enhancements. However, catchment management and nature-based solutions are likely to be a subset of these costs. For Wessex Water, we estimate that 46% of the reported enhancement opex relates to catchment management schemes.

Separately, there may be pre-AMP7 schemes for which the operating costs are reported by companies within their base expenditure. To the extent that these costs are included, Ofwat's models could include some implicit allowances for the continuation of those schemes.

We have undertaken analysis of the enhancement opex reported by companies across the industry in the first two years of AMP7, and have produced indicative estimates of the implicit allowances associated with these reported

³ UK progress on reducing nitrate pollution, Report of the House of Commons Environmental Audit Committee (2018)

costs. We set out these estimates in [section A1-2.5.3]. However, we do not have visibility of other schemes and associated costs across companies in England and Wales, and therefore are not in a position to estimate the size of any implicit allowances, if any, that may arise from any pre-AMP7 schemes.

Nevertheless, it is clear that our costs of continuing non-traditional schemes that were started in AMP7 and earlier are materially greater than any implicit allowances. A cost adjustment is therefore required to ensure that Wessex Water is appropriately funded for its catchment management activities. Further details about our proposed adjustment are set out in [section A1-2.5]

A1-2.2. Unique circumstances

Ofwat lists the following questions in relation to this area:

- a) *Is there compelling evidence that the company has unique circumstances that warrant a separate cost adjustment?*
- b) *Is there compelling evidence that the company faces higher efficient costs in the round compared to its peers (considering, where relevant, circumstances that drive higher costs for other companies that the company does not face)?*
- c) *Is there compelling evidence of alternative options being considered, where relevant?*

As set out in the previous sections, Wessex Water is one of the leading water companies within England and Wales in its use of catchment management and nature-based solutions. This means that Wessex Water is in a relatively unique position in delivering water and environmental quality improvements through non-traditional solutions.

Furthermore, we do not consider that it is necessary for a company's situation to be completely unique for a cost adjustment to be warranted. What matters is how the company stands relative to others in the industry, given Ofwat's use of cross company benchmarking to set allowances for base costs. This point is considered in some detail in the Reckon (2022) report referred to above. Our position on this issue is consistent with that adopted by Ofwat for its PR19 adjustments for growth related expenditure, which took the historical industry average rate of growth in connections as the relevant reference point in considering need for adjustment.

A1-2.3. Management control

In relation to the "management control" area, Ofwat lists the following questions:

- d) *Is the investment driven by factors outside of management control?*
- e) *Have steps been taken to control costs and have potential cost savings (eg spend to save) been accounted for?*

We do not think this criterion applies directly to this claim.

The extent to which Wessex Water uses C&NBS to address raw water quality deterioration as opposed to traditional capex-based solutions is within our management control. Indeed, we have made a conscious decision to prioritise non-traditional solutions where possible and economically viable.

Our claim is based on our view that the Ofwat's price control approach fails to adequately remunerate companies that take this approach. Ofwat's final methodology for PR24 recognises this failure and proposed changes going forward. However, we do not think that these changes work for the continuation of pre-AMP8 schemes.

We plan to set out our approach to achieving cost efficiencies and savings in our PR24 business plan submission.

A1-2.4. Materiality

In relation to materiality, Ofwat list the following questions:

- f) *Is there compelling evidence that the factor is a material driver of expenditure with a clear engineering / economic rationale?*
- g) *Is there compelling quantitative evidence of how the factor impacts the company's expenditure?*

Ofwat's threshold for materiality is that the net value of the claim (i.e. the gross value less implicit allowances) should be greater than:

- For the water resources price control, 6% of forecast totex for AMP8.
- For the wastewater network plus price control, 1% of forecast totex for AMP8.

Our business plan totex for AMP8 is still under development, so we do not have figures to apply Ofwat's materiality thresholds. Nonetheless, on current evidence, whilst our claim will be in the region of Ofwat's materiality thresholds, we do not expect the net value of our claim for non-traditional solutions would exceed the materiality threshold in either price control area.

However, we believe that these thresholds should not be applied to this specific claim. There are strong reasons for our position on this matter:

- There does not seem to be a good case for the application of a materiality threshold in a context where Ofwat has recognised that a funding gap exists for the continuation of non-traditional solutions that commenced in previous price control periods.
- The application of the same relatively high materiality threshold to claims relating to both AMP8 capex and AMP8 opex could in itself create a bias against opex-based solutions for equivalent benefits. Opex reflects the annual cost of the solution, whereas capex captures costs over the lifetime of the underlying asset so even if a capex-based approach was less efficient it would be more likely to exceed materiality thresholds.
- The application of a materiality threshold could be seen as a barrier to the continuation of catchment management and nature-based solutions, which would be inconsistent with stated Government and Ofwat policy in this area. The incentives that companies face in relation to nature-based solutions and other innovative initiatives are driven not only by the funding arrangements for new initiatives from AMP8 onwards but also by the approach that Ofwat takes to funding the ongoing costs of nature-based solutions that companies are already committed to.

We understood from Ofwat's PR24 final methodology that it was open to adopting a modified application of its standard cost adjustment process in relation to nature-based solutions. Specifically, Ofwat said that it proposed to change "*the burden of proof for cost adjustment claims which relate to catchment and nature-based solutions.*" The disapplication of the standard materiality threshold seems particularly relevant in this context.

A1-2.5. Adjustment to allowances (including implicit allowance)

In relation to the adjustment to allowances, Ofwat lists the following questions:

- h) *Is there compelling evidence that the cost claim is not included in our modelled baseline (or, if the models are not known, would be unlikely to be included)? Is there compelling evidence that the factor is not covered by one or more cost drivers included in the cost models?*
- i) *Is the claim material after deduction of an implicit allowance? Has the company considered a range of estimates for the implicit allowance?*
- j) *Has the company accounted for cost savings and/or benefits from offsetting circumstances, where relevant?*

- k) Is it clear the cost allowances would, in the round, be insufficient to accommodate the factor without a claim?
- l) Has the company taken a long-term view of the allowance and balanced expenditure requirements between multiple regulatory periods? Has the company considered whether our long-term allowance provides sufficient funding?
- m) If an alternative explanatory variable is used to calculate the cost adjustment, why is it superior to the explanatory variables in our cost models?

We now set out the rationale for our proposed adjustment to allowances, which also addresses Ofwat's questions.

A1-2.5.1. The gross value of the claim (provisional)

The gross value of the claim is the forecast opex of continuing catchment management and nature-based solution schemes that had commenced in AMP7 and earlier. The tables below set out our current forecasts of costs split into the water resources and wastewater network plus price control areas. These figures are provisional and we expect to update the final values as part of our business plan submission.

Table 3 Water Resources: Gross value of the claim (provisional), £ thousands 2022/23 prices

Pre-AMP8 Scheme name	Approach to continuation into AMP8	2025/26	2026/27	2027/28	2028/29	2029/30
Belhuish SGZ enhanced CM	Continue using different approach	305	305	305	305	305
Cherhill SGZ enhanced CM	Continue using different approach	110	110	110	110	110
Deans Farm SGZ enhanced CM	Continue using different approach	386	386	386	386	386
Diversbridge SGZ enhanced CM	Continue using different approach	121	121	121	121	121
Fonthill Bishop SGZ enhanced CM	Continue using different approach	170	170	170	170	170
Friar Waddon SGZ enhanced CM	Continue using different approach	117	117	117	117	117
Milborne St Andrew SGZ enhanced CM	Continue using different approach	196	196	196	196	196
Sturminster Marshall SGZ enhanced CM	Continue using different approach	239.5	239.5	239.5	239.5	239.5
Shepherds Shore SGZ enhanced CM	Continue using different approach	115	115	115	115	115

Shapwick SGZ enhanced CM	Continue using different approach	239.5	239.5	239.5	239.5	239.5
Continuation Surface Water SGZ Catchment Delivery (Ashford catchment)	Continue unchanged	60	60	60	60	60
Continuation Surface Water SGZ Catchment Delivery (Durleigh Catchment)	Continue unchanged	60	60	60	60	60
Continuation Surface Water SGZ Catchment Delivery (Sutton Bingham)	Continue unchanged	30	30	30	30	30
Continuation Surface Water SGZ Catchment Delivery (River Tone to Durleigh catchment)	Continue unchanged	50	50	50	50	50
Continuation Groundwater SGZ nitrate CM (Alton Pancras)	Continue unchanged	2	2	2	2	2
Continuation Groundwater SGZ nitrate CM (Briantspuddle)	Continue unchanged	66	66	66	66	66
Continuation Groundwater SGZ nitrate CM (Bulbridge)	Continue unchanged	1	1	1	1	1
Continuation Groundwater SGZ nitrate CM (Eagle Lodge)	Continue unchanged	13	13	13	13	13
Continuation Groundwater SGZ nitrate CM (Empool)	Continue unchanged	23	23	23	23	23
Continuation Groundwater SGZ nitrate CM (Forston)	Continue unchanged	5	5	5	5	5
Continuation Groundwater SGZ nitrate CM (Hooke)	Continue unchanged	3	3	3	3	3
Continuation Groundwater SGZ nitrate CM (Litton Cheney)	Continue unchanged	4	4	4	4	4
Continuation Groundwater SGZ nitrate CM (Sutton Poyntz)	Continue unchanged	20	20	20	20	20
Total (Water resources)		2,336	2,336	2,336	2,336	2,336

Table 4 Sewage treatment and disposal (Wastewater network plus): Gross value of the claim (provisional), £ thousands 2022/23 prices

Pre-AMP8 Scheme name	2025/26	2026/27	2027/28	2028/29	2029/30
Poole Harbour Nitrate Offsetting Scheme	401	401	401	401	401
Poole Harbour Nitrate voluntary performance commitment	121	121	121	121	121
Phosphorus CNB (Stour, Parrett/Tone)	4,000	4,000	4,000	4,000	4,000
Nitrate Source Trend Modelling - Nmod20	50	50	50	50	50
Sustainable nutrient management to land investigation	100	100	100	100	100
Total (Wastewater network plus)	4,672	4,672	4,672	4,672	4,672

A1-2.5.2. Estimated implicit allowances for non-traditional solutions

Under Ofwat's price control framework, totex allowances are not typically attached to (or ring-fenced for) particular activities. In this context, the 'implicit' allowance for an activity is a notional concept, rather than one that is explicitly set out in a price control decision. As part of its assessment criteria for cost adjustment claims, Ofwat has specifically asked for claims to include estimates of the implicit allowance associated with the activities that are the subject of the claim.

Ofwat's April 2023 models cover the period from 2011/12 to 2021/22 and includes actual expenditure by companies on catchment management and nature-based solutions to the extent that these have been included within reported base expenditure even if these costs are not separately identified. Separately, Ofwat has said that it will include within its base cost models enhancement opex relating to phosphorus and nitrate removal relating to the years 2020/21 and 2021/22.

This means that estimates of modelled costs for PR24 derived from these models will include some implicit allowances for catchment management and nature-based solutions.

Appendix 9 of Ofwat's PR24 methodology decision sets out guidance for companies on the estimation of implicit allowances and provides three illustrative and non-exhaustive examples for how implicit allowances could be calculated:

- removal of relevant expenditure from the cost models;
- removal of an explanatory variable from the models; and
- assessment of unit costs related to the claim.

In relation to water resources costs, we do not have industry-wide data to be able to estimate the amount of relevant expenditure that are included within the models. Furthermore, Ofwat's proposed models do not include an explanatory factor that could explain (or could proxy) variations between companies in relation to these costs. As such, we are not able to estimate the size of any implicit allowances. However, as set out in the previous section, we believe that we are in a relatively unique position across the industry in the extent of our use of catchment management activities and nature-based solutions.

For the purposes of this claim, we have assumed that any implicit allowances arising from Ofwat's proposed water resources models are immaterial in the context of the claim.

In relation to sewage treatment and disposal, we have industry-wide data reported in APR submissions on enhancement opex associated with phosphorus and nitrate removals for the years 2020/21 and 2021/22. As set out in the previous section, non-traditional solutions are likely to be a subset of these costs. We do not have data on the extent to which any opex relating to pre-AMP8 schemes have been reported within base expenditure. For the purposes of this claim, we have assumed there are no costs reported within base expenditure.

We have developed an approach that is broadly consistent with the first approach, i.e. removal of reported enhancement opex. This approach is summarised below.

- We estimate annual average modelled costs for Wessex Water for sewage treatment and disposal over the period from 2017/18 to 2021/22 using Ofwat's models April 2023 models SWT1, SWT2 and SWT3, *including* the reported enhancement opex on phosphate and nitrate removal (i.e. Ofwat's original models).
- We then estimate the annual average modelled costs for Wessex Water for sewage treatment and disposal over the period from 2017/18 to 2021/22 using Ofwat's models SWT1, SWT2 and SWT3, *excluding* the reported enhancement opex on phosphate and nitrate removal for all companies.
- We calculate the difference between the two sets of modelled costs for Wessex Water. This is an estimate of the implicit annual allowance for Wessex Water for AMP7 enhancement opex on phosphate and nitrate removal.
- We then scale this implicit allowance down by an estimate of the proportion of Wessex Water's enhancement opex on phosphate and nitrate removal that is attributable to catchment management and nature-based solutions.
- This scaled-down figure is our estimate of the implicit allowance for phosphate and nitrate removal through nature-based solutions and catchment management arising from the inclusion of those enhancement opex lines within Ofwat's base models.

Using this approach, we estimate that the annual implicit allowance for nature-based and catchment solutions within Ofwat's sewage treatment models is £0.01m per year (in 2022/23 prices).

We focused on Ofwat's three sewage treatment models from April 2023 because these allowed the analysis to focus on sewage treatment costs, which is the focus of the claim.

These may be over- or under-estimates of the level of implicit allowances. However, due to data limitations, we are not currently in a position to improve upon these estimates. Ofwat may be able to request additional data from companies that would allow more robust estimates to be produced for its draft and final determinations.

A1-2.5.3. The net value of the claim (provisional)

The net value of the cost adjustment claim is estimated by subtracting the estimated implicit allowance from the gross value of the claim. The net values based on our provisional figures for the gross claim value are set out in the table below. We will confirm the gross value of the claim as part of our PR24 business plan submission.

Table 5 Summary of the net value of the claim (provisional) for water resources (2022/23 prices)

	2025/26	2026/27	2027/28	2028/29	2029/30
Gross value of the claim (£m)	£2.336	£2.336	£2.336	£2.336	£2.336
Implicit allowance (£m)	Zero	Zero	Zero	Zero	Zero

Net value of the claim (£m)	£2.336	£2.336	£2.336	£2.336	£2.336
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Table 6 Summary of the net value of the claim (provisional) for wastewater network plus (2022/23 prices)

	2025/26	2026/27	2027/28	2028/29	2029/30
Gross value of the claim (£m)	£4.672	£4.672	£4.672	£4.672	£4.672
Implicit allowance (£m)	£0.01	£0.01	£0.01	£0.01	£0.01
Net value of the claim (£m)	£4.662	£4.662	£4.662	£4.662	£4.662

A1-3. Cost efficiency

In relation to cost efficiency, Ofwat lists the following questions in its guidance:

- Is there compelling evidence that the cost estimates are efficient (for example similar scheme outturn data, industry and/or external cost benchmarking, testing a range of cost models)?*
- Does the company clearly explain how it arrived at the cost estimate? Can the analysis be replicated? Is there supporting evidence for any key statements or assumptions?*
- Does the company provide third party assurance for the robustness of the cost estimates?*

The previous section explains how we have estimated the gross and net values of the cost adjustment claim. These estimates draw on our current forecasts of the costs associated with catchment management and nature-based solutions over AMP8.

We will confirm these cost forecasts and provide the necessary supporting evidence as part of our PR24 business plan submission.

A1-4. Need for investment

In relation to the need for investment, Ofwat lists the following questions:

- Is there compelling evidence that investment is required?*
- Is the scale and timing of the investment fully justified?*
- Does the need and/or proposed investment overlap with activities already funded at previous price reviews?*
- Is there compelling evidence that customers support the need for investment (both scale and timing)?*

In this section, we provide a brief summary of the need for solutions that address deterioration in raw water quality and river water downstream from our treatment works. Although Ofwat's criterion mentions 'investment', these costs are primarily operating expenditure.

The costs covered by this claim relate to enhancements that Ofwat funded via previous price controls, but for which the funding provided does not extend into AMP8. This includes schemes that were enhancements in AMP7 and earlier schemes. As part of its enhancement allowances for raw water determination at PR19, Ofwat provided an allowance to Wessex Water for “the continuation of catchment management projects started in AMP6. Ofwat used its discretion in setting explicit enhancement allowances to provide funding for the ongoing operating expenditure of enhancements introduced in previous price control periods.

About 80% of the water we supply comes from groundwater sources in Wiltshire and Dorset. These natural underground reservoirs, known as aquifers, are formed when rainwater infiltrates rocks such as chalk, limestone and sandstone. Groundwater is usually free of the impurities found in other water sources like surface reservoirs or rivers so it needs less treatment. However, the level of treatment required to maintain and further improve water quality is affected by rising levels of nitrates and pesticides that the water has picked up from the soil.

The remaining 20% of the water we supply comes from surface reservoirs filled by rainfall and runoff from the surrounding catchment. Water quality in these reservoirs is directly affected by the activities taking place on this land. If routine operations such as pesticide and/or nutrient use are poorly timed or managed they can put additional pressure on treatment works or restrict use of the sources.

Fertilisers (nutrients) and pesticides are key components for agricultural production and land management. Nitrogen fertiliser increases crop yields and pesticides are used to control insects, molluscs, weeds and diseases. Excess nitrates that are not taken up by crops and pesticide residues that have not broken down are at risk of being washed into rivers and aquifers. These will pollute the environment and the water sources used for public water supply. Currently more than 20 of our water supply sources are affected by elevated nitrate concentrations.

The traditional approach to dealing with poor quality water has been to undertake capex-intensive treatment works upgrades. We have already built four treatment plants to remove nitrate and 11 sites now have carbon filters to remove pesticides. But these are expensive to build and operate, have a large carbon footprint and provide no benefit to the wider environment.

Building more treatment plants does not benefit the environment or our customers. Instead we have developed an approach that is more sustainable, lower in cost, has wider benefits for the environment and involves working with the local community.

A1-5. Best option for customers

[Section A1-2.1.] of this document explains the rationale for our view that catchment management and nature-based solutions can provide a cost-effective alternative to capex-intensive upgrades to treatment works.

A1-6. Customer protection

- a) Are customers protected (via a price control deliverable or performance commitment) if the investment is cancelled, delayed or reduced in scope?
- b) Does the protection cover all the benefits proposed to be delivered and funded (eg primary and wider benefits)?
- c) Does the company provide an explanation for how third-party funding or delivery arrangements will work for relevant investments, including the mechanism for securing sufficient third-party funding?

Given the legislation and regulatory incentives (including PCs) that exist around providing excellent quality drinking water and nutrient removal, we will be required to continue this work or propose an alternative, traditional treatment solution. This gives very significant customer protection against us discontinuing this spend and no further protection ought to be required. Specifically, Ofwat is clear that PCDs are to protect customers from under- or non-deliver of funded enhancements, and as this claim relates to the on-going maintenance of previous improvements, PCDs do not apply.