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By email

Secretary of State for Environment,  
Food & Rural Affairs

27 February 2023

Dear Secretary of State,

### **Northumbrian Water –draft water resources management plan 2024 consultation response**

Long term water resources planning is a key business planning activity and essential for the efficient delivery of resilient water services for customers and protecting and enhancing the water environment. Ofwat has a key role to play in enabling this by funding through the 2024 price review (PR24). Therefore, it is vitally important that we consider whether water companies are identifying the best value approaches and delivering these, to ensure the best outcomes in terms of targeted investment to address challenges. The water resource management planning process is essential to helping Ofwat and water companies get this right. As a statutory consultee, we welcome the opportunity to comment on Northumbrian Water's draft water resource management plan (WRMP), which it published in November 2022. This letter provides a summary of our assessment of Northumbrian Water's draft WRMP and should be read alongside our letter setting out the wider context of our review and the general approach to the assessment of companies' draft WRMPs.

Northumbrian Water supplies water to a population of approximately 2.7 million across the north east of England. Its water resources are planned on the basis of two water resources zones, which include major cities including Newcastle upon Tyne, Sunderland and Durham. Northumbrian Water has identified key challenges in its water resource forecasts that require action to reduce demand or provide additional supplies.

Overall, there are some areas of Northumbrian Water's plan that are in line with our expectations for this stage of a draft WRMP. In particular, it delivers on expectations by:

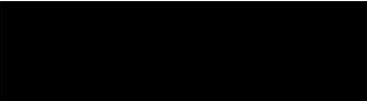
- presenting well justified methodologies for assessing deployable output and forecasting demand that align with the Water Resource Planning Guideline (WRPG),
- thoroughly explaining its supply and demand forecasts, covering all relevant components in sufficient detail.

However, there are several material areas we have identified from our assessment where the plan does not yet provide sufficient and convincing evidence that it delivers the best value, low regret plan in the interest of customers and the environment. The annex to this letter provides detail on the specific areas of the company plan that we consider need further work and evidence. In particular, in its final WRMP Northumbrian Water should:

- quantify and justify any changes in water needs between the end point of WRMP19 and the starting point for WRMP24. This includes explaining any change in the context of whether PR19 schemes and performance targets are being delivered and achieved as planned;
- outline the options screening process used to get from the unconstrained option list to the feasible option list. This is to ensure that the criteria, and their application, is transparent and consistent. The feasible list must contain an unbiased suite of options from which best value options can be justified;
- explain the benefit that an additional 24 Ml/d of Kielder outage allowance brings to customers and discuss this with the Environment Agency;
- demonstrate how its approach to best value decision making has been informed by customer views and preferences on the options available;
- provide sufficient and convincing evidence to justify why a linear profile to achieve demand reduction targets is optimal from a timing of investment perspective;
- set out and clearly justify an ambitious strategy for non-household demand reduction. This is to ensure new environmental targets aimed at reducing demand are adhered to. Northumbrian Water should also ensure its ambition for per capita consumption targets are under the dry year annual average scenario;
- provide robust and clear supporting evidence for its data tables. We are concerned about the level of detail and accuracy applied to the WRMP data tables. The tables had missing, incomplete, and resubmitted data which led to some difficulties in assessing the plan.

We thank Northumbrian Water for its hard work and effort in producing a detailed draft WRMP and responding to queries throughout the consultation process. Northumbrian Water should now focus on delivering the expected outcomes of the current plan (WRMP19 funded via PR19) and consider all the responses to this draft consultation in its final plan. We look forward to continuing to work together as final WRMPs are prepared, to protect water resources now and in the future.

Yours sincerely



**Aileen Armstrong**  
**Senior Director, Company performance and price reviews**

## Annex

In this annex we outline further details on the points raised in our main letter alongside more detailed comments on different areas of the draft plan. Our points reflect our assessment approach focusing on:

- **Demand management ambition and outcomes** - alignment with government targets and statutory requirements for water demand.
- **Assessment of water needs** - including key drivers for WRMP24 and the supply demand balance forecast and the need for enhancement investment.
- **Options to meet water needs** - the approach taken to identifying and screening options for both supply and demand, review of demand management and supply side proposals including sensitivity testing for key areas, sufficiency of options and option utilisation under normal and peak scenarios, including scalability and modularity.
- **Decision making and prioritisation** - best value decision making for customers and the environment, how the company has approached strategic planning frameworks and alignment with Ofwat's long-term delivery strategies and common reference scenarios<sup>1</sup>.
- **Long term best value programme** - cost efficiency, bill impact and affordability of the plan.
- **Customer and stakeholder engagement** - the type and quality of interaction with customers and stakeholders and the impact this has had on the draft plan formulation and proposals.
- **Board assurance** – company assurance and governance processes, including Board engagement and sign-off.

### Demand management ambition and outcomes

The Government's strategic priorities for Ofwat state reducing demand for water can relieve pressures on water supply and increase our resilience to extreme drought. Water companies must act to reduce demand for water in a way that represents value for money in the long-term. We expect all companies to use their WRMPs to show how they will meet long term water demand targets including:

- halving leakage across the industry by 2050, in comparison to 2017-18 levels<sup>2</sup>;

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<sup>1</sup> Ofwat, [PR24 and beyond: Final guidance on long-term delivery strategies](#), April 2022

<sup>2</sup> For example, [February 2022: The government's strategic priorities for Ofwat - GOV.UK \(www.gov.uk\)](#)

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- reducing per capita consumption (PCC) to 110 litres per head per day (l/h/d) by 2050<sup>3</sup>.

A further target is now set in the Environmental Targets (Water) (England) Regulations 2023<sup>4</sup> for the reduction of potable water supplied by water undertakers in England to people in England. This is that the volume supplied per day per head of population is at least 20% lower than the 2019–20 baseline by 31 March 2038. We expect companies to demonstrate how they will deliver against this target in their final WRMP.

We welcome that Northumbrian Water has set out its plans to reduce leakage by 50% from 2017–18 levels by 2050. The company also indicates that it plans to meet the per capita consumption (PCC) target of 110 l/h/d by 2050<sup>5</sup> but it should ensure its plan reflects this ambition. The company should test a scenario of meeting the target under the dry year scenario for its final WRMP.

The company's final WRMP should also reference the target to reduce distribution input by 20% by 2037–38 and demonstrate how it plans to deliver this through a combination of reductions in the key demand components, leakage, household consumption and non-household consumption.

### **Demand reduction strategy**

As we outlined in November 2021<sup>6</sup>, we expect near-term interventions being identified in WRMPs to deliver long-term targets such as a 50% leakage reduction and 110l/h/d per PCC to be set in the context of the optimum long-term strategy. Setting a glidepath to meet long-term targets and outcomes should enable an efficient and deliverable long-term programme to be identified. The company's plan only considers linear leakage reduction profiles, with a single 50% leakage reduction by 2049–50 profile selected as the preferred option. The company has not considered alternative investment profiles such as one that considers non-linear reductions. The company should provide sufficient and convincing evidence to justify why a linear profile – rather than doing more or less in the near term – is optimal from a timing of investment perspective.

### **Delivery of PR19 performance commitments and WRMP19 targets**

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<sup>3</sup> For example, [February 2022: The government's strategic priorities for Ofwat - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/consultations/2022/02/2022-02-22-the-governments-strategic-priorities-for-ofwat)

<sup>4</sup> Defra, [Environment Act 2021: environmental targets](#) December 2021

<sup>5</sup> 110 l/h/d is a dry year target

<sup>6</sup> Ofwat, [Ofwat's expectations for strategic planning frameworks at PR24](#), November 2021

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We are concerned that in the draft WRMP data tables the company does not forecast to deliver its PR19 performance commitment levels for leakage and PCC. In response to a query on this the company has confirmed that it is still aiming to deliver its leakage performance commitment level of 12%. It confirms that it does not intend to achieve the performance commitment level on PCC as set out at PR19.

We expect the company to deliver its PR19 and WRMP19 targets. Companies should not expect additional customer funding to address deficits resulting from under delivery in the current or previous periods. We expect the company to review its proposals in these areas for its final WRMP.

### **Leakage**

We welcome that Northumbrian Water has set out it plans to reduce leakage by 50% from 2017-18 levels by 2050. However, although the company tests three scenarios, it is not clear how the testing has influenced the selected target of 50% presented in the draft plan. The company is proposing a three-year average leakage reduction of 7.2%<sup>7</sup> across the 2025-30 period which is a lower level than the 12.0% it plans to deliver for the 2020-25 period. We expect the company to provide sufficient and convincing evidence of target testing, an explanation of its decision-making process and a justification for the selected leakage reduction in its final WRMP.

Northumbrian Water has not discussed its customer supply pipe leakage policy. We are encouraging companies to evaluate the benefits of a common industry approach to addressing leakage on customers' own pipes. We expect companies to provide a view on the benefits of a common industry approach in their statements of response and final WRMPs. We will support companies in the development of a common approach but expect the industry to lead on the development. The Water UK leakage routemap to 2050<sup>8</sup> committed to an informed debate on customer supply pipe strategy by December 2022.

### **Per capita consumption (PCC)**

We welcome that Northumbrian Water has also set out its plans to meet the per capita consumption (PCC) target of 110 l/h/d by 2050<sup>9</sup>. However, this is under the normal year scenario and the company should test a scenario of meeting the target under the dry year scenario for its final WRMP.

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<sup>7</sup> From 2019-20 three-year average baseline.

<sup>8</sup> Water UK, 'A Leakage Routemap To 2050', March 2022.

<sup>9</sup> 110 l/h/d is a dry year target

Northumbrian Water proposes a three-year average PCC reduction of 4.1% across the 2025–30 period which shows lower ambition in comparison with the 2020–25 period. We expect the company to justify its chosen ambition for 2025–30 in comparison to 2020–25 in its final WRMP.

### **Business demand**

We did not identify a strategy for reducing non-household demand in the company's preferred plan. There is also no reference in the company plan to the ambition to reduce distribution input by 20% by 2037 based on 2019–20 baseline announced by Defra<sup>10</sup>. We expect the company to set out and clearly justify an ambitious strategy for non-household demand reduction in its final WRMP.

### **Metering**

The company has set out an objective through its best value plan for all its meters to be smart by 2035. The company has reviewed five metering options, phased over one or two five-year price control periods depending on the option. However, the company does not seem to have considered alternative investment profiles such as one that schedules investment over longer periods. The company should explain more robustly why the preferred metering option is best value, from a timing of investment perspective.

Due to its Northern area of supply water resource zones (WRZs) being in surplus during the 2025–30 period, the company has not considered any compulsory metering schemes. However, it is considering options for whole area metering. It presents customer research indicating that smart metering was the least supported option of the demand side options. The company should provide sufficient and convincing evidence that its preferred meter technology and rate of metering is optimal over the long-term including how this interacts with the selection of other demand management options. Northumbrian Water should also explain how this rate of metering can be achieved via enhanced optant metering as it is not classified as an area of water stress so cannot compulsorily bill on the meters that it installs.

### **Assessment of water needs**

A robust assessment of current and future water needs is critical as it drives the gap between supply and demand and therefore drives the scale of investment required for the 2025–30 period and beyond.

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<sup>10</sup> Defra, [Environment Act 2021: environmental targets – GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/environmental-targets-2021), December 2022  
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We provided detailed feedback on Northumbrian Water's assessment of water needs in our pre-consultation feedback in 2022. Some of our feedback has not been appropriately or fully addressed in the draft WRMP and has been raised again in amongst points in this section. Northumbrian Water should provide sufficient and convincing evidence that the feedback has been addressed in the final WRMP.

The company's supply demand balance starting point for the draft WRMP24 is lower than its forecast for the same point in the final WRMP19. The company has provided limited high-level information regarding the reasons and appropriateness of the changes to components of the supply-demand balance. This means that there are some concerns that the overall outcome of the WRMP19 as funded at PR19 has not been delivered in the round. The company should fully quantify and justify the reasoning for changes between WRMP19 and the starting point for WRMP24 at a supply-demand balance component level with sufficient and convincing evidence. Where a step change in supply-demand balance between WRMP19 and WRMP24 is not sufficiently justified as being due to changes to scenarios or planning assumptions, and may instead be as a result of non-delivery or underperformance, this will be taken into account at PR24 in the assessment of enhancement funding.<sup>11</sup>

The company's problem characterisation is presented in the main plan narrative. The 25 year planning horizon chosen meets the minimum requirements in the planning guidelines, however, we expect Northumbrian Water to clearly explain in its final WRMP the rationale for the choosing this. Northumbrian Water has confirmed that it does not have any sustainability reductions to include within WRMP24 and that no long-term environmental destination reductions in deployable output are needed within WRMP24.

Northumbrian Water's draft plan confirms it will be resilient to a 1 in 500 year event, in line with national framework targets, and an increase from the 1 in 250 year event resilience that the company stated was achieved during WRMP19. The company uses methods to test the resilience level, including deployable output calculation methods, which are well described and are in line with the water resources planning guidelines.

Northumbrian Water state that maintaining a 1 in 500 year drought resilience has an impact on the Kielder water resource zone (WRZ) and the company propose to resolve supply deficits through its preferred demand management options. Northumbrian Water should set out clearly when the 1 in 500 year drought resilience is achieved across the planning horizon in its WRZs by implementing the selected options, and whether it has undertaken sensitivity testing on this date.

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<sup>11</sup> Ofwat, '[Creating tomorrow, together: Our final methodology for PR24, Appendix 9 – Setting expenditure allowances](#)', December 2022, pp. 86-87.

Northumbrian Water's outage allowance is very high compared to most other companies, at over 10% of the company's distribution input. Its raw water losses allowance is also high when compared to other companies, at over 6%. Therefore, these planning assumptions contribute significantly to the company supply-demand balance and any need for investment. We reiterate our pre-consultation feedback that Northumbrian Water should review its outage allowance (planned, unplanned and Peak Week Production Capacity) and make clear which glidepath profile has been projected (WRPG section 5.8). This is especially relevant for the Kielder water resource zone outage allowance which it stated has increased since the final WRMP19 by almost 24 Ml/d due to the application of a new outage methodology and discussions with the Environment Agency. The outage allowance for the Kielder zone in the final WRMP19 was 57.6 Ml/d and has now increased to 81.3 Ml/d. The company needs to present sufficient and convincing evidence that the outage and raw water loss allowances are appropriate in both the short and long term and are not driving unnecessary and high regret investment. The company should also explain how this level of outage tracks the reported unplanned outage performance commitment, and how the company has considered options to reduce its outage and raw water loss allowances.

The company has updated its population forecasts since WRMP19, which has resulted in a change in assumed population of around 80,000 for the year 2025–26. This is a significant change in starting assumption. Although the company describes the high-level factors which results in the change, it provides insufficient evidence that this updated number (which is over 3% higher than the previous estimate) accurately reflects the population of the company's operating area. We expect the company to provide sufficient and convincing evidence in its final WRMP that the revised population forecast for WRMP24 is reliable including validation against outturn, and why it is different to the WRMP19 forecasts from less than five years ago.

We expect Northumbrian Water to make substantial efforts on demand reduction for the rest of the 2020–25 price control period, to ensure that WRMP19 forecast, and PR19 performance commitment targets are met annually, and to set firm foundations for delivering WRMP24.

## Options to meet water needs

Northumbrian Water forecast a baseline supply surplus in its Berwick and Fowberry WRZ and a small baseline supply deficit in the Kielder WRZ. No supply-options are selected for the preferred plan because a surplus can be restored by demand savings from the PR24 preferred demand management options. However, we expect the company to fully explore supply-side options where they can be developed at a lower cost in its region to support trading to companies that need the water. The company should present sufficient and convincing evidence that all options and potential recipients has been explored as part of its final WRMP.

Northumbrian Water has not described the options screening process used to get from its unconstrained option list to a feasible option list or detailed any assessment criteria used in identifying the options chosen. Rather, a summary of the different option types implemented in consideration with customer preferences over time has been provided. In the final WRMP we expect Northumbrian Water to clearly show the criteria used to select feasible options and state the reasons for rejecting any options.

In the draft WRMP tables, some options information was lacking, with cells left blank or labelled not applicable for water available for use and total Net Present Cost cells. For the final WRMP, we expect all options to be developed to the same level of detail. This will enable the decision-making tool to select an unbiased preferred best value plan from the option portfolio.

## Decision making and prioritisation

The link between the company WRMP and the Water Resources North (WRn) regional plan is described. There is a discussion around how decision-making addresses option selection and uncertainties, however we would like Northumbrian Water to provide more narrative on the decision-making tools and company-level decision making in its final WRMP.

Northumbrian Water has not referred to Ofwat's public value principles. We would like Northumbrian Water to use Ofwat's public value principles, and to reflect expectations set out in the PR24 final methodology, within its best value planning process in its final plan, and to explain how these have been used to inform best value decision making. Where investment is needed, beyond least cost, the value of the additional benefit needs to be presented within the WRMP planning tables. The robustness of this valuation data is important where companies are requesting significant areas of investment. As well as clearly presenting this, the company should provide sufficient and convincing evidence that the costs to deliver the best value plan is outweighed by the additional value it provides.

In its final plan, we expect Northumbrian Water to present a core pathway in line with the WRPG definition that includes low-regret investment to meet future uncertainties and additional option value to allow further flexibility in the future. If Northumbrian Water chooses not to present an adaptive plan, we expect the company to provide a consistent narrative and clear justification for why an adaptive planning approach has not been used. The company should also consider whether uncertainties around the success of demand management options should be included in an adaptive plan.

As part of this evidence, Northumbrian Water should clearly set out the impact of each individual Ofwat common reference scenario (combining them could risk producing a very low probability scenario) and compare it to the 'most likely' scenarios on which the preferred plan is based. This should include quantifying the impact on demand of the low and high

scenarios for climate change, demand, and abstraction reductions across the planning period. The company should also quantify the estimated impact on the expenditure requirement of:

- 1) planning based on the high scenarios for climate change, demand, and abstraction reductions, and the slower scenario for technology; and
- 2) planning based on the low scenarios for climate change, demand, and abstraction reductions, and the faster scenario for technology.

This will allow for improved understanding of the drivers of investment, the sensitivity of the plan to future scenarios and confidence in the investments being proposed. Northumbrian Water should use the results of this testing to identify and justify with sufficient and convincing evidence low regret investments, rather than just those that meet both high and low planning needs in a non-adaptive way.

## Long term best value programme

We are concerned about the level of detail and accuracy applied to the WRMP data tables, which has included missing, incomplete and resubmitted data. This has led to some difficulties in our assessments, and some later re-submissions have not been able to be incorporated into our assessment. This is disappointing, as our pre-consultation feedback emphasised the need for robust WRMP data, to lead consistently into business plans for PR24 decisions. We also wrote to all regulatory directors on 30 August 2022 emphasising that "plan assurance should include thorough quality assurance of the accuracy of the information in your draft WRMP24 data table submissions. We encourage you to ensure you submit accurate draft WRMP24 data tables first time round. If you do not, we may identify poor data quality in your submission in our public consultation response to you." This must be resolved for the final WRMP.

Northumbrian Water has been unable to quantify the base expenditure impacts of delivering its draft WRMP and the impacts of base expenditure on relevant performance levels. This raises concerns regarding the robustness and reliability of the costs and benefits presented by the company in its preferred programme. It should provide the base expenditure impact of its plan and expected performance levels to be delivered in the final WRMP.

The company has identified £102 million of enhancement expenditure (in 2021-22 prices) relating to delivery of its draft WRMP in the 2025-30 period. Over the 2025-50 period the company has estimated a requirement for over £636 million of enhancement expenditure.

Northumbrian Water plans to deliver around 66 Ml/d of additional WAFU benefit in 2025-30. The company has proposed a large investment in metering improvements, approximately 77% of total requested enhancement expenditure. These benefits are being delivered at a higher

cost with a unit rate of 5.6 £m/Ml/d when compared to other companies, and thus their selection should be sufficiently evidenced and justified in the company's final WRMP.

The company should provide sufficient and convincing evidence that the preferred options being selected, across all areas of its plan, are best value in its final WRMP24 and ensure costs are reliable, efficient and appropriately allocated.

## Stakeholder engagement

Stakeholder and customer engagement has been undertaken as part of the pre-consultation process for the draft WRMP. Customer priorities have been set out in the report. However, it is not clear how customer preferences influenced best value decision making, or how customer views have been represented in the draft WRMP. Northumbrian Water should:

- show how its best value decision making has been informed by customer views and preferences on the options available;
- engage with customers to understand their views on the scale and timing of investments;
- demonstrate how the customer viewpoint has been considered in relation to investment decisions.

There has been limited engagement with retailers and non-household customers ahead of developing the draft WRMP. Northumbrian Water should provide evidence in its final WRMP to demonstrate how the views of retailers and non-household customers have been considered. Effective engagement with regulators has been undertaken and has been used to refine the draft WRMP.

Engagement with the WReN regional group and with neighbouring water companies has been carried out. Northumbrian Water has worked with WReN members to align draft WRMPs and the regional plan on supply and demand options, and on environmental ambition.

Northumbrian Water has not provided sufficient evidence of opportunities to enable co-funding or co-delivery or sufficiently explored commercial models to aid delivery. Further investigation of partnership opportunities for co-funding and co-delivery with stakeholders should be undertaken and set out in the final WRMP.

## Assurance

A Board assurance statement signed by the CEO and CFO is provided, confirming the Board is satisfied with the plan. Information is provided on how the Board were informed on developments and key areas of the plan.

A description of Board engagement in the development of the best value plan is provided, and a description of the groups involved in the decision making process was provided in response to a query raised. We expect Northumbrian Water to include this explanation of its decision making process in the final WRMP.