

December 2019

PR19 final determinations

**Northumbrian Water – Cost efficiency
final determination appendix**

PR19 final determinations: Northumbrian Water – Cost efficiency final determination appendix

About this document

This document is a cost efficiency appendix to 'PR19 final determinations: Northumbrian Water final determination'. This document provides further details of the company specific issues related to cost allowances and is structured as follows:

- Section 1 provides a summary of our decisions on the company's cost adjustment claims;
- Section 2 provides a summary of our decisions on the company's enhancement proposals, by enhancement area;
- Section 3 provides our decision on costs proposed by the company under the transition programme;
- Section 4 provides our decision and unit cost adjustment related to the WINEP/NEP uncertainty mechanism.

Further information on our assessment and our approach can be found in the 'Securing cost efficiency technical appendix' and the various excel feeder models that we have published.

1. Cost adjustment claims

Northumbrian Water does not submit any cost adjustment claims.

In its August 2019 representation, Northumbrian Water requests that we consider its proposals for addressing climate change and urban creep impacts and protect customers from sewer flooding that may result from these affects. We consider this as if it were a cost adjustment claim to adjust our models for company specific circumstances, rather than assessing it as an additional enhancement request.

We assess costs for reducing sewer flooding risk as part of our base plus econometric modelling. We explain our decision not to make any additional allowance for Northumbrian Water's proposals in this area in 'Northumbrian Water final determination'.

2. Enhancement assessments

Our approach to assessing enhancement expenditure is detailed in our publication ‘Securing cost efficiency technical appendix’. We generally assess enhancement expenditure separately for each enhancement category, as defined by the individual enhancement cost lines in company business plan tables. We assess multiple lines together where there is a potential for costs to be apportioned differently by companies and where there is some synergy between programmes.

Our preferred method of assessment is benchmarking analysis. Where the investment area does not lend itself to statistical modelling we rely more on the evidence provided by companies in their business plans. We follow a risk-based process of having a lighter touch (‘shallow dive’) assessment for low materiality costs and a more thorough assessment of the evidence (‘deep dive’) of high materiality costs.

Tables 1 and 2 summarise our consideration and allowances for the enhancement expenditure cost lines submitted by the company. We give further details in our published enhancement feeder models for Northumbrian Water.

Table 1: Assessments of water enhancement expenditure, 2020-25 (£ million of 2017-18)

Enhancement cost	Company view in August 2019 business plan (after reallocations)	Our final determination allowance	Rationale for decision
Meeting lead standards	10.3	10.3	We use a benchmark model to make allowances for these costs. Northumbrian Water is more efficient than our benchmarks and we allow the full amount requested.
Investment to address raw water deterioration	34.8	28.9	We use our deep dive approach to assess the proposed cost for this enhancement line. We challenge option selection for the Layer scheme. We find the option selection for the work at Mosswood robust. We also identify opex to run the enhanced processes at the two treatment works in the submission. We consider that these operational costs are covered by our base allowance. See ‘Northumbrian Water final determination’ for further details.

Metering (excluding new connections) for meters requested by optants, customers and businesses	43.1	43.1	As at draft determination we make an allowance for new meter installations based on our unit cost model. We assess the company's proposals to replace existing meters with smart meters through a deep dive and compare with costs of other companies' plans. We find that the company's costs do not vary significantly from other companies (based on the limited available dataset) for this activity, and therefore allow them in full. We make no change in allowance from draft determination
Resilience	95.1	63.7	We use our deep dive approach and challenge the need, cost efficiency and/or optioneering of the proposed investments. See 'Northumbrian Water final determination' for further information.
Security	12.9	9.3	We use a deep dive approach to make allowances for security costs. We disallow the company's Security and Emergency Measures Direction (SEMD) requested cost as the company has spent above the benchmark in this area. We consider SEMD should now be part of the company's 'business as usual' programme of work and expenditure should now be funded from the company's base allowance. We allow its non-SEMD security costs in full. The company provides sufficient and convincing evidence to demonstrate the need for this investment and that the forecast costs are efficient. See 'Northumbrian Water final determination' for further information.
Total clean water WINEP	15.8	14.4	We use our shallow dive approach to set allowances, applying the company shallow dive efficiency factor only, for drinking water protected areas, ecological improvements at abstractions, eels regulations, invasive non-native species and water framework directive measures.
Improvements to river flows	0.1	0.1	We do not challenge the costs for this area of expenditure due to low materiality.
Aggregated free form lines	0.4	0.0	In its representation Northumbrian Water requests £0.4 million to develop strategic regional water resources solutions. However, since the company does not propose any regional solutions and asks only for enhancement funding for its regional planning processes, we do not make an enhancement allowance. Water resources planning activity is included in our base cost allowance.
Total water enhancement	212.4	169.7	

Table 2: Assessments of wastewater enhancement expenditure, 2020-25 (£ million of 2017-18)

Enhancement cost	Company view in August 2019 business plan (after reallocations)	Our final determination allowance	Rationale for decision
First time sewerage (s101A)	1.0	1.0	We use a benchmark model to make allowances for these costs. Northumbrian Water is more efficient than our benchmarks and we allow the full amount requested.
Resilience	50.8	39.9	We use our deep dive approach and challenge the need, cost efficiency and/or optioneering of the proposed investments. See 'Northumbrian Water final determination' for further information.
Security	3.9	3.9	We use a deep dive approach to make allowances for security costs. We benchmark the company's wastewater security costs against other companies based on security costs incurred as a proportion of base totex. We allow the costs in full for Northumbrian Water. See 'Northumbrian Water final determination' for further information.
Total WINEP/NEP in the round allowance	173.9	137.9	We derive our allowance from the output of cost benchmarking models except where we conducted a shallow or deep dive. Our shallow dive assessments allow the costs in full for the programme relating to chemical investigations. We assess the requested costs for wastewater investigation using a deep dive assessment and apply a cost challenge as there is insufficient evidence that a range of options were considered and how the recent measures specification relate to the submitted cost estimates. As we were not able to develop a robust cost benchmarking model for the sanitary parameters model, we allow the costs in full. Further we determine our view of efficient costs at a programme level by summing all the allowances for the individual lines and making an adjustment to account for catch-up efficiency and frontier shift. Company's allowance is the lesser of this view and their requested investment.
Total wastewater enhancement	229.6	182.7	

3. Transition expenditure

The transition programme allows companies to bring forward planned investment from 2020-25 to 2019-20, where it is efficient to do so and/or to enable the company to meet statutory deadlines early in the next regulatory period. Although the expenditure is incurred in 2019-20, for the purpose of cost performance incentives we consider it as expenditure incurred in the following regulatory period (2020-25).

Table 3 and 4 set out our allowances under the transition programme for wholesale water and wastewater. We allow costs when reasonably justified in order to make efficient use of resources to minimise whole life costs, where it is efficient or in customers' interests to bring forward an investment, or to enable companies to meet early statutory deadlines.

For the avoidance of doubt, a disallowance of a proposed expenditure in Table 3 or 4 should not be interpreted as a disallowance of the expenditure from our 2020-25 cost allowance; only as a disallowance under the transition programme.

Table 3: Transition expenditure in wholesale water price controls 2019-20 (£ million of 2017-18 CPIH deflated)

Description of expenditure	Control	Requested expenditure	Allowed expenditure	Rationale
Resilience	Water Network Plus	1.4	0.0	We do not allow any of the resilience expenditure the company proposes due to lack of evidence on the need to incur this investment early.

Table 4: Transition expenditure in wholesale wastewater price controls 2019-20 (£ million of 2017-18 CPIH deflated)

Description of expenditure	Control	Requested expenditure	Allowed expenditure	Rationale
Growth at sewage treatment works	Wastewater Network Plus	1.2	0.0	This is a routine investment with no early statutory deadlines in the next regulatory period to be met. We therefore disallow the requested transition expenditure.
Resilience	Wastewater Network Plus	0.2	0.0	We do not allow all of the resilience expenditure the company proposes due to lack of evidence on the need to incur this investment early.

4. WINEP uncertainty mechanism

Our totex allowance for companies includes an allowance for environmental obligations set out in the Water Industry National Environment Programme (WINEP). Some of the requirements in WINEP are not expected to be confirmed until December 2021 at the earliest, which is after we make our final determinations in December 2019. Unconfirmed requirements in WINEP are known as 'amber' schemes. Where we make an allowance for amber schemes, we use a mechanism to adjust our totex for schemes which are later confirmed as not required.

Table 5 sets out the adjustments we will make for each scheme in Northumbrian Water's WINEP programme that is currently unconfirmed, if the scheme is confirmed as not required for the period 2020-25. We will make the adjustments at the end of the control period. Our adjustments are based on the company's totex estimates (after reallocations) as adjusted by our company specific efficiency factor or, in the case of wastewater schemes, by the ratio of our final totex allowance for the WINEP programme to the company's estimate (after reallocations).

Table 5: WINEP uncertainty mechanism – cost adjustments for unconfirmed WINEP schemes included in our final determination (£ million in 2017-18 prices)

Unique ID	Scheme category / name	Company's totex unit rate (£m)	Our allowed totex unit rate (£m)
WINEP/NEP ~ Water Framework Directive Improvement Schemes – Nutrients (P removal)			
7NW200531	Slaley - in combination effect with De Vere Hotel	$2,223,565.14 \times (\text{p.e.})^{-0.94}$ per p.e.	1.805
7NW200472	Longnewton		3.060
7NW200494	New Moors		3.551
7NW200556	Teeside Airport		3.884
7NW200044	Bishop Middleham		1.895
7NW200508	Pity Me		3.995
7NW200509	Plawsworth		3.095
7NW200463	Kirklevington STW		3.102
7NW200507	Pittington		3.047
7NW200012	Aldin Grange		3.126
7NW200461	Kelloe		2.169
7NW200065	Carlton Redmarshall		3.185
7NW200089	Fishburn		2.403
7NW200078	Dipton		1.962
7NW200067	Chilton Lane		3.226
7NW200524	Sedgefield		3.564
7NW200568	Trimdon		4.265

Unique ID	Scheme category / name	Company's totex unit rate (£m)	Our allowed totex unit rate (£m)
7NW200086	Esh Winning		0.000
7NW200071	Crookhall		1.385
7NW200527	Sherburn		3.349
7NW200521	Sacrison		4.002
7NW200465	Lanchester		4.325
7NW200464	Knitsley		3.622
7NW200583	Witton Gilbert		2.724
7NW200051	Bowburn		0.000
7NW200057	Browney		0.140
WINEP/NEP ~ Water Framework Directive Improvement schemes – Sanitary parameters reduction			
7NW200525	Sedgeleth	2,223,565.14 x (p.e.) ^{-0.94} per p.e.	4.668
WINEP/NEP ~ Chemicals removal			
7NW200110	Hustledown STW (CIP2 T1)	5.684	4.505
7NW200112	Hustledown STW (CIP2 T1)	0.000	0.000
WINEP/NEP ~ Eels Regulations (Measures at intakes)			
7NW10005	Barrasford raw water pumping station - Rede to Gunnerton Burn, Barrasford to S Tyne, Watersmeet to Tidal Limit - Eels Regs and MM3	1.071	1.071
7ES200010	Eel measures at Ormesby Broad	0.000	0.000
WINEP/NEP ~ Water Framework Directive measures			
7NW100001	Balder - d/s Hury Resvoir dam wall - continue AMP 6 adaptive management trial putting seasonality to compensation release then implement end of AMP 7 - MM5, MM2, MM7 and MM8	0.083	0.083
7NW10088	BLACK BURN catchwater, feeds into Burnhope Burn d/s of Catchwater 100% take. MM5, MM7	0.133	0.133
7NW10009	Burnhope Burn catchwater to River Derwent MM1 and MM2 , MM5, MM7	0.244	0.243
7NW100011	Harthope burn catchwater - Water supply asset - MM1 and MM7	0.177	0.176
7NW100013	Ireshope - Wham pasture MM1. MM7 Burnhope res supply	0.177	0.176
7NW100014	Ireshope Burn - Greenwell Crags - MM1, MM7 Burnhope res supply	0.177	0.176
7NW100002	Lune - Grassholme Res Dam wall - continue AMP 6 adaptive management trial putting seasonality	0.083	0.083

Unique ID	Scheme category / name	Company's totex unit rate (£m)	Our allowed totex unit rate (£m)
	to compensation release then implement end of AMP 7 - MM5, MM2, MM7 and MM8		
7NW10006	Pont - channel d/s of sluice - MM6 and MM7	0.15	0.149
7NW100016	River Derwent - implement outcomes of Adaptive Management trials for end of AMP 7 - MM5	0.083	0.083
7NW100017	Smiddy Shaw and Hisehope reservoirs Surface Water Transfer , MM5, MM7 and MM8	0.083	0.083
7NW100003	Waskerley Res - d/s dam wall - implement outcomes of Adaptive Management trials for end of AMP 7 - MM5, plus MM1, MM2, MM4, MM8	0.083	0.083
7NW100012	Wear Pipe crossing St Johns Chapel -fish passage MM1	0.177	0.176

As explained in 'Northumbrian Water final determination' we are not allowing the reinstated metaldehyde product substitution costs in the drinking water protected areas cost model as we consider it very likely that the ban on the use of this pesticide will eventually be applied. However, in view of the uncertainty we will use a cost adjustment mechanism to make the necessary adjustments for catchment management schemes if the ban is not implemented. The details are set out in Table 6.

Table 6: Uncertainty mechanism – cost adjustments for unconfirmed requirements excluded from our final determination (£ million of 2017-18)

Unique ID	Scheme	Company's totex unit rate	Our allowed totex unit rate
WINEP/NEP ~ Water Framework Directive Measures			
N/A	Metaldehyde product substitution costs	None proposed	Up to £1.32m max

Ofwat (The Water Services Regulation Authority) is a non-ministerial government department. We regulate the water sector in England and Wales.

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December 2019

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