June 2020

Reference of the PR19 final determinations: Response to Yorkshire Water's 27 May submission to the CMA

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Introduction

1.1 We have produced this document as a targeted reply to Yorkshire Water's 27 May submission to the Competition and Markets Authority (CMA), focused on **new materials** (evidence and/or arguments). We also submit additional evidence in response to certain points made by the company. As explained in our letter of 17 June 2020, we consider it is important to provide this written reply in order to assist the CMA in its consideration of companies' submissions. In particular, having our perspective on the new materials will enable the CMA to work most effectively.

1.2 In the interests of brevity, we do not seek in this document to set out our answer to the very many points made with which we disagree.[1] The CMA is already burdened with an extremely large volume of submissions and materials in this redetermination. If there are any particular respects in which we have not explained our position in sufficient detail, or where the CMA would be assisted by our response to points we have not addressed, we would be happy to provide further clarification.

1.3 Yorkshire Water states that 'the decisions Ofwat has made regarding outcomes are seriously flawed'.[2] We set out why we do not consider this to be correct, demonstrating that our use of comparative information, analysis conducted and decisions made to set stretching and achievable performance commitment levels, are **appropriate and in the best interests of customers**.

1.4 The new materials Yorkshire Water raises which relate to the **allowed return and to financeability** are common to those of other companies. We address them in our accompanying 'Risk and return response to companies' 27 May submissions' document. We also address there the issues the company raises on its actual structure, including the company's view that we mischaracterised its actual structure.

1.5 The CMA has published a number of representations from third parties, following an invitation for comments on the issues raised in the references from

[1] Similarly in our 4 May response we explained our position focusing on the key points which the CMA will need to redetermine, in a pragmatic and proportionate manner, and therefore did not seek expressly to address every detailed point made by Yorkshire Water with which we disagreed, in particular since the CMA also has our position set out in detail In our final determination. In the normal way, the fact that a particular company argument is not expressly dealt with should not be taken to imply our agreement with the position stated by Yorkshire Water.
[2] Yorkshire Water, 'Response to Ofwat Reply', May 2020, p.107, Overview

Ofwat and the companies' statements of case. These include representations from customers and representative groups, as well as from other water companies.

1.6 Yorkshire Water claims that 'Support for that decision (seek a redetermination) among Yorkshire Water's stakeholders has grown further since it was first taken, as shown by the range of third-party submissions made to the CMA'.[3] That is unsurprising, and uncontroversial. However, in considering how much weight to place on the different third party representations, we encourage the CMA to note any links which exist between the disputing companies and those third parties.[4] We stress that we are in no sense alleging any kind of impropriety. Rather, that it is important for the CMA to be aware of the nature and membership of some of these bodies.

1.7 We note that the submissions from Citizen's Advice and The Consumer Council for Water (CCW) provide responses in support of our final determinations.

1.8 A number of representations describe the extent of customer support for the Yorkshire Water business plan, including that from Yorkshire Water's customer challenge group (CCG), called the Yorkshire Forum for Water Customers. **We recognise the extent of challenge made by the Forum** during the development of Yorkshire Water's business plan, and acknowledge the level of assurance provided to us on the quality of the company's customer engagement and how customer views influenced the shape of the business plan, in line with our expectations of the role of CCGs for PR19.

1.9 Yorkshire Water states (in paragraph 2.18.4) it 'agrees that it is responsible for its actual capital structure and financing arrangements…At all times YWS has raised its concerns on financeability in relation to a notional capital basis'. However, we are not able to reconcile this with its statement (in paragraph 2.18.10) that the company 'believes a company-specific cost of debt provides a greater incentive for companies to efficiently manage their debt…". Consistent with all previous price reviews and the policy in place since well before Yorkshire Water adopted its current capital structure, our view is that the allowed return, **calculated on the basis of the notional capital structure**, should not be adjusted to take account of the actual financing choices made by

[3] Yorkshire Water, 'PR19 Redetermination', 27th May 2020, p.3, paragraph 4
[4] For example, both Aire Rivers Trust and Don Catchment Rivers Trust name Yorkshire Water as one of their partners and funders

a company. We discuss these issues further in the 'Risk and return response to companies' 27 May submissions' document.

Duties

1.10 At various points in its 27 May submission, Yorkshire Water presents its arguments using the language of statutory duties. In our 4 May response to the companies' statements of case, we provided the CMA with a summary in one place of our position on the points related to statutory duties.[5] We have considered carefully whether it would assist the CMA for this reply to provide a point-by-point rebuttal on duties. However, having analysed the company's submission, we have concluded that there is nothing which merits such treatment. Notwithstanding Yorkshire Water's protestations to the contrary, the principal arguments made collapse into substantive disagreement about judgements made when we reached the final determination. In so far as necessary, these points are addressed substantively at the appropriate point.

1.11 There are several instances where Yorkshire Water more or less subtly mis-describes our position, with the intention that it can knock down the supposed position for rhetorical effect. This is unhelpful. We are sure that the CMA will look beyond these arguments, and we do not address them point by point.

1.12 There are three points particular to Yorkshire Water that merit a short mention:

- It claims that we have been inconsistent or somehow changed our position, in particular in relation the financing duty.[6] These points arise from a mischaracterisation of our position, which we are sure it is not necessary to restate;
- Yorkshire Water makes various allusions to public law arguments.[7] These are vague, baseless, and we strongly deny that they have any validity; and
- Yorkshire Water also makes generalised allegations about a departure from established regulatory practice principles. Again, these are not specific, and have no merit whatsoever.

[5] Ofwat, Introduction and overall stretch on costs and outcomes – response to cross-cutting issues in the companies' statements of case, May 2020, pp.18-23, paragraphs 3.1-3.21
[6] See for example, Yorkshire Water, 'Response to Ofwat Reply', May 2020, pp.44-45, paragraph 2.17.3
[7] See for example, alleged stepping "… beyond the public law constraints on the exercise of its powers." Yorkshire Water, 'Response to Ofwat Reply', May 2020, p.16, paragraph 1.1.53

Information Asymmetry

1.13 Anglian Water and Yorkshire Water claim that we have used information asymmetry as an argument in an inconsistent manner, where it suits us, and in particular where we do not have evidence. We reject this. We have not used information asymmetry arguments unless appropriate. We have provided supporting information and explanation for each of our conclusions. In some cases we have used information asymmetry as an additional supporting point. Our experience in PR14 suggests it is important not solely to rely on company evidence; for example companies' PR14 risk analysis proved to be unduly pessimistic. Unavoidably, **information asymmetry will be a real issue for the CMA**, where it is hard to verify what the disputing companies argue.

1.14 To attempt to overcome information asymmetry, where we can we use benchmarking. To protect customers, we also ask companies to justify where they may require additional expenditure or altered performance commitments compared to other companies. Sometimes our benchmarking provides us with additional information on companies or customers, for example on willingness to pay, and we have intervened in company plans to reflect this where appropriate.

1.15 In some places the disputing companies incorrectly suggest we are relying on information asymmetry when we are not. For example, Yorkshire Water suggests that systematic outperformance by water companies is required to justify information asymmetry. While we note that independent reviews and other regulators have suggested that the allowed return should be discounted to take account of asymmetric information and expected outperformance, we did not make such an adjustment in the PR19 final determinations. As we have already noted, Yorkshire Water has underspent its totex allowance in each of the last four price reviews,[8] and the company has not engaged with our historical assessment of totex out and under performance which shows a 2.3% median outperformance over 2000-19.[9] There is nothing inconsistent about pointing to the difficulties posed by information asymmetry, whilst also referring to other instances where we are better placed than the disputing companies to take an expert and independent view across the sector.

[8] Ofwat, Introduction and overall stretch on costs and outcomes – response to cross-cutting issues in companies' statements of case, May 2020, pp.47-48, paragraph 4.6, and p.80, table 6.1
[9] Ofwat, Risk and return – response to common issues in companies' statements of case, May 2020, pp.31-33, paragraphs 2.52 – 2.55, figure 2.6 and table 2.1

2. The resilience impact of the final determination

2.1 In its 27 May 2020 submission,[10] Yorkshire Water presents a description of what it claims would be the impact of the final determination on its resilience. It provides a new report by Arup,[11] which assesses resilience maturity scoring and shows the deterioration in maturity based on what Yorkshire Water states would be its change in priorities at different points in time. It states it would rely more on operational short-term actions to minimise underperformance payments than it proposed in its business plan.

2.2 Yorkshire Water claims that the impact of the final determination will increase customers' bills by an extra £17 a year in 2025-30, using tables showing the impact then of moving from capex to opex solutions in 2020-25. It also presents scenarios considering the impact of adverse weather conditions on possible additional underperformance payments.

2.3 It refers back to what it set out in its statement of case,[12] that it would:

- Not deliver a number of intended base maintenance schemes including replacing end of life water meters;
- Use pipe repairs rather than replacement to reduce leakage;
- Decrease investment in drainage area studies;
- Reuse existing concrete tanks to fulfil WINEP obligations; and
- Use short-term jetting solutions to unblock sewers rather than investing in the additional hydraulic capacity or other asset improvements.

Our response – the resilience impact of the final determination

2.4 It is for Yorkshire Water to manage how it spends its cost allowance to meet its statutory obligations and outcomes. In the totex regime of PR19, companies are able to deliver a different mix of capex and opex solutions to those in its business plan to best deliver for customers and the environment. We accept that if Yorkshire Water chooses to defer capital maintenance this is very likely to have a negative impact on its long-term resilience. This is an outcome, should the company follow this course of action, we would expect in these circumstances, and is not in contention. Rather what is in contention is **whether such drastic action as deferring capital maintenance is**

[10] Yorkshire Water, 'Response to Ofwat Reply', May 2020, Section 11, pp. 240-255
[11] Yorkshire Water's 27 May 2020 Annex 08; Arup: 'Strategic Resilience Review'
[12] Yorkshire Water, Statement of case, April 2020, pp.86-87, paragraph 295

necessary and prudent. Our assessment is that our comparatively derived cost allowance is enough for an efficient company to maintain its assets and resilience, undertake its required enhancement programme, and meet its performance commitment levels.

2.5 What the information appears to show is the **readiness with which Yorkshire Water is prepared to deprioritise vital capital maintenance**, and that it considers it can do this because it won't face immediate underperformance payments in the areas in which it defers maintenance. This suggests that it has not adequately balanced its suite of outcomes to include sufficiently challenging commitments to deliver for the long term.

2.6 We are very concerned that the reduced capital maintenance programme Arup has assessed includes stretching out the asset lives on assets vital to delivering a safe water supply to customers.[13] Such an approach suggests the company is at greater risk of breaching its statutory requirements to produce wholesome drinking water. This is extremely concerning.

2.7 Yorkshire Water proposes that it will need to increase bills in future periods to catch back up with delayed capital maintenance, thus making customers pay in the future for the relatively poor performance position it finds itself in, in 2020. It is not acceptable to ask customers to pay for the company to catch up with its peers.

2.8 In our 4 May response to Yorkshire Water's statement of case,[14] we provided evidence of the company's earlier willingness to forego capital maintenance, when it claimed it had historically both 'very low sewer renewal rates, largely in the interests of affordability for customers',[15] and indicated that during the 2012-13 to 2016-17 period it did not conduct enough mains repairs to maintain stable levels of leakage.[16]

2.9 The Arup report assesses Yorkshire Water's current resilience maturity as marginally less than level 3 "established" (or industry standard) with regard to some of its key services, such as water treatment, wastewater collection and

[13] Yorkshire Water, Annex 08 – ARUP – 'Strategic Resilience Review', May 2020, p. B1, Appendix B1
[14] Ofwat, Response to Yorkshire Water's statement of case, May 2020, p.80, paragraph 4.22 and p. 96, paragraph 4.76
[15] Yorkshire Water, Exhibit 66-157, 33_Sewer Collapses_19c.pdf, Yorkshire Water business plan September 2018, p. 3
[16] Yorkshire Water, Exhibit 040, Ofwat Annex Y001 letter 'NM to DB 01-11-19, November 2019, NM letter to David Black', p,11

wastewater treatment. This does not provide comfort that the company has been appropriately investing to maintain its resilience through maintaining some of its key assets and services before 2020. We consider this further supports our conclusions about the company's poor performance and approach to asset health.[17]

2.10 We note that Yorkshire Water's own 27 May asset health report produced by Economic Insight,[18] observes that 'precisely because outcomes are (and will likely to continue to be) financially incentivised, any firm 'cutting' maintenance spend in order to fund its inefficiency likely faces subsequent adverse consequences at the next price control and beyond.' We consider it is possible that the position that Yorkshire Water finds itself in now is precisely that which it describes here. Cutting of its earlier maintenance spend, as the company has itself evidenced,[19] could mean it now faces such adverse consequences, and it proposes that customers should foot the bill.

2.11 We note that the company does not provide any evidence of assessing different approaches to varying the rates of investment from that in its business plan and the resulting impact on service that it claims. It provides no evidence as to how it has derived the appropriate opex interventions it says it will need to undertake, and how those opex interventions will help it deliver the outcomes when supposedly capital solutions will not. It appears to lack any consideration of innovation and efficiencies that may help it deliver more within the envelope of our final determination. This programme of swapping opex for capex is presented as the only solution to delivering on our final determination.

[17] Ofwat, Response to Yorkshire Water's statement of case, May 2020, p.80, paragraph 4.23
[18] Yorkshire Water, Annex 02, Economic Insight Framework for asset health, 27 May 2020, p.4
[19] Yorkshire Water, Statement of Case Exhibit 66-157, 33_Sewer Collapses_19c.pdf, Yorkshire Water business plan September 2018, pp.3

3. Costs

3.1 Yorkshire Water raises a number of new issues around cost assessment in its 27 May submission. A number of them are common to those of other companies, and so we address them in our 'Cross-cutting response to companies' 27 May submissions'. The new issues that Yorkshire Water raises that we cover there include alternative base cost models, the application of frontier shift efficiency to WINEP and metering costs, and new costs required to meet the requirements of the Industrial Emissions Directive (IED). We address Yorkshire Water's new issues in relation to the calculation of frontier shift efficiency in a separate Europe Economics report.[20]

3.2 We address new issues and evidence on cost matters that are specific to Yorkshire Water in this document below. These are:

- Costs for addressing flooding risk in Hull;
- The impact of phosphorus removal on base costs;
- The impact of the Urban Wastewater Treatment Directive on phosphorus removal enhancement costs; and
- Business rates cost allowance.

Taking into account the long term in Hull

3.3 The company provides a paper by Dieter Helm on long term and catchment perspectives, particularly applying it as a critique of our final determination cost allowance for Hull and Haltemprice.[21]

Our response: taking into account the long term in Hull

3.4 Although thought-provoking, the paper is broad and wide ranging and therefore more for our consideration in planning our approach for PR24 than evidence in support of the company's plan to provide additional flooding resilience in Hull. The query response Yorkshire Water also provided on 27 May 2020 was provided to us in October 2019, as we asked questions of the company to gain the evidence we needed to make a bottom up allowance. However, it demonstrates only "indicative costing" for blue-green infrastructure (natural and

[20] X001 - Europe Economics for Ofwat, "Response to Some Key Points on Real Price Effects (RPEs) and Frontier Shift", June 2020
[21] Yorkshire Water, Annex 03 – D Helm –'Catchment, Natural Capital and PR19', 27 May 2020

semi-natural solutions) versus grey infrastructure (constructed solutions) interventions at the four identified hotspot areas, with a total cost of more than the £28.6 million it requested. There is **still no full cost breakdown, nor an options appraisal of all the solutions considered,** and no detail of the particular investment proposals that it proposes customers should fund. Given the importance that Yorkshire Water places on this proposal and its significance to stakeholders, it is odd that so little planning and evidence has been made available to justify its case.

3.5 That being the case, we repeat our conclusion from our 4 May response[22] that Yorkshire Water did not provide sufficient evidence to justify the scope and cost build-up that came to the requested £28.6 million total. Despite our support of the need, unique approach and partnership working, we were therefore unable to assess the scope and costs through any bottom up approach.

Phosphorus removal impact on base costs through wastewater treatment complexity

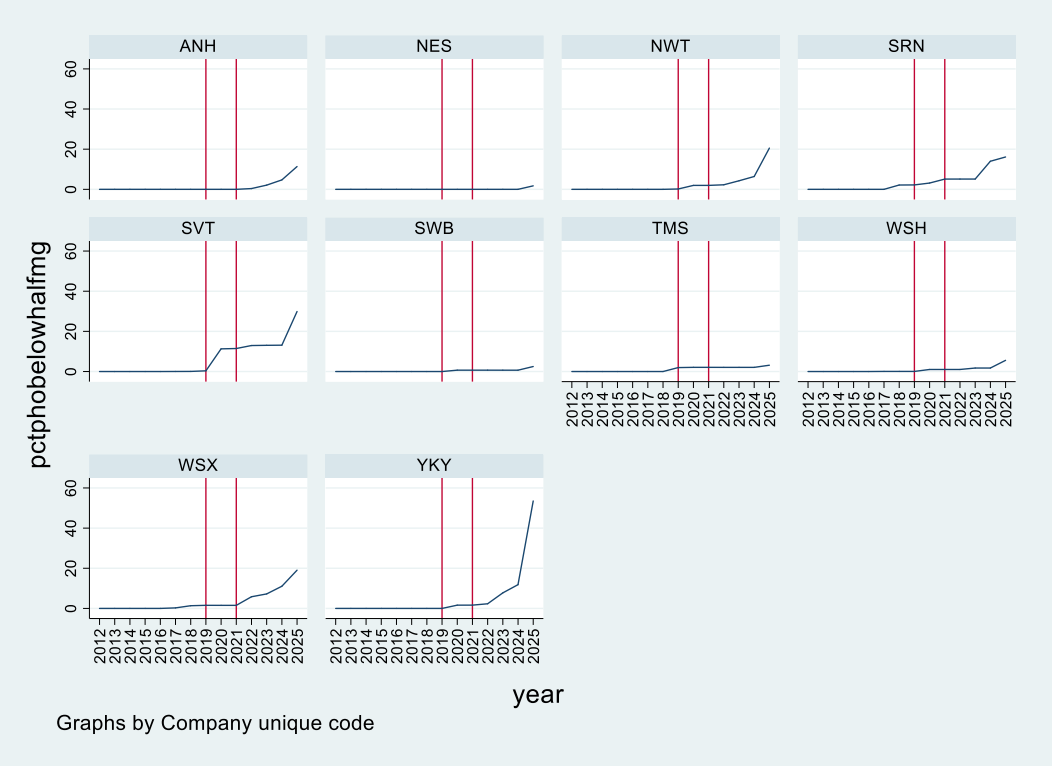
3.6 Both Yorkshire Water and Anglian Water claim the cost drivers used in our wastewater econometric models do not fully capture sewage treatment complexity to assess base costs.[23] [24] This is a new argument they did not raise during our collaborative cost model development and consultation. They claim that although our models capture correctly the treatment complexity requirements associated with treating wastewater to low ammonia consents, the phosphorus consent also drives costs and is not accounted for in our models. Anglian Water suggests we use a combined wastewater treatment complexity variable that integrates both ammonia consents below 3mg/l and phosphorus consents below 0.5 mg/l.

3.7 Figure 3.1 below shows the percentage of sewage load treated at works with a phosphorus consent below 0.5 mg/l for the period 2011-12 to 2024-25 (using April 2019 revised business plan company data). The years to the left of the first red line correspond to the period we used as input data for our econometric

[22] Ofwat, Response to Yorkshire Water's statement of case, May 2020, p.54, paragraph 3.104
[23] Yorkshire Water, Annex 11 – Oxera Addressing Ofwat's Response to Yorkshire Water Services' Statement of Case, 27 May 2020, pp.16-19
[24] We note that both Yorkshire Water and Anglian Water have, presumably independently, raised this argument in their 27 May submissions for the first time.

models (2011-12 to 2018-19) and the years of the right of the second red line refer to PR19 years (2020-21 to 2024-25).

Figure 3.1: Percentage of sewage load treated to a consent of below 0.5mg/l



Our response: phosphorus removal treatment complexity

3.8 Firstly, it is clear that for most companies the variable proposed is zero for the period of our model input data. This makes it a difficult variable to use in our modelling without it being a potential dummy variable for high forward looking cost proposals whether or not they are related to the tight phosphorus consent.

3.9 Secondly, it is our engineering view that a potential step change in operational and capital maintenance costs would result from the first time imposition of a phosphorus consent, and not between a less stringent phosphorus consent and a more stringent one, as it is with ammonia consents. The less stringent phosphorus consents often require both chemical dosing and a tertiary treatment process to remove solids from sewage effluent. The tighter consents require possibly a change to that tertiary treatment stage and additional chemical treatment. Neither Yorkshire Water nor Anglian Water provides

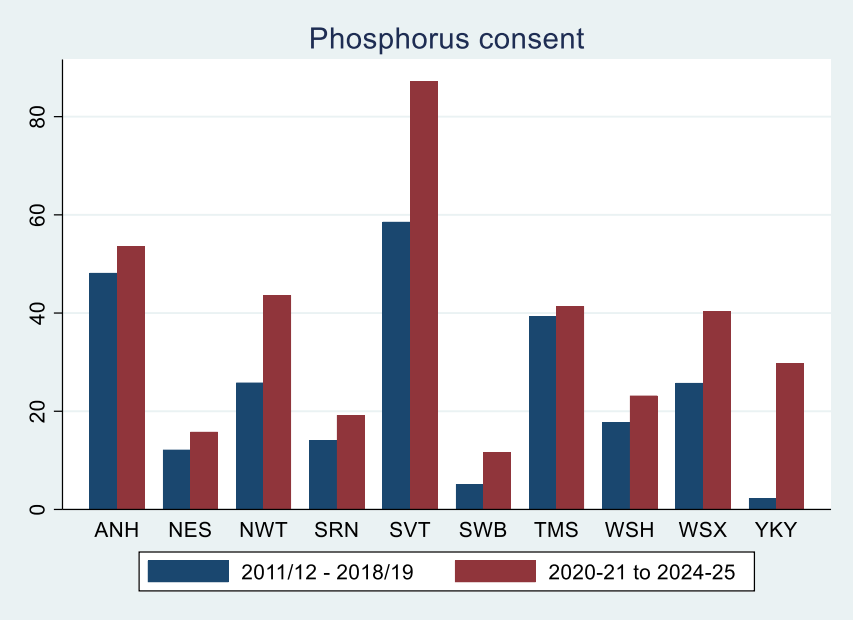
evidence as to why it is the lower phosphorus consents driving higher base costs as opposed to any phosphorus consent.

3.10 Thirdly, we allow enhancement totex costs for both the installation of new processes to meet new and tightened phosphorus consents, **and the associated opex for running them**, which includes the required chemical costs. It is not clear what any additional base costs in 2020-25 will be driven by sites with the phosphorus consents below 0.5 mg/l. From figure 3.1 it is clear that the schemes are mostly planned to be commissioned towards the end of the five year period so any capital maintenance costs replacing equipment just being installed seems highly unlikely.

3.11 We show in figure 3.2 the proportion of sewage load that has any phosphorus consent. We show the eight year average percentage of sewage load treated at sites with phosphorus consents during the period of our model input data against the five year average for 2020-25. This shows that Yorkshire Water's position has a material change, but since in our view it is phosphorus consents in themselves that are more likely to be a driver of base costs, then any adjustment would need to give the most funding to Severn Trent Water. Severn Trent Water proposed the most efficient wastewater base costs in 2020-25 followed by Thames Water. Both of these companies have relatively high proportions of sewage treated at sites with phosphorus consents both during the model input data and during 2020-25. This suggests that either:

- a variable of the proportion of load with phosphorus consent would not necessarily allow Yorkshire Water any additional wastewater base funding for 2020-25 compared with our modelled allowance; or
- if there are any additional base costs associated with lower phosphorus consents, they are reflected in our cost allowance.

Figure 3.2 Average percentage of sewage load treated at a sewage treatment works with a phosphorus consent



The impact of the Urban Wastewater Treatment Directive on enhancement phosphorus removal costs

3.12 In its 27 May submission, Yorkshire Water continues to put forward a case that the degree to which its AMP7 phosphorus removal programme is driven by the Urban Waste Water Treatment Directive (UWWTD) is unique in the industry.[25] Furthermore, the constraints imposed by the UWWTD mean that potentially cheaper catchment-based solutions are not available to it. Indeed, Yorkshire Water estimates that the unit cost of meeting UWWTD driven phosphorus removal obligations is almost twice that of meeting Water Framework Directive (WFD) obligations. As a result, it claims its efficient costs appear higher than those of other companies. The company contends that omitting the UWWTD as a driver in our models results in a gap between the requested and modelled totex which we mistakenly regard as inefficiency.

Our response on enhancement phosphorus removal costs

[25] Yorkshire Water, 'Response to Ofwat Reply', May 2020, pp. 102-103, section 3.67, and Yorkshire Water, Annex 11- 'Oxera – 'Addressing Ofwat's Response to Yorkshire Water Services' Statement of Case', May 2020

3.13 Oxera clarifies[26] that the unit used by Yorkshire Water in its unit cost comparison is "length of river length improved", measured in kilometres. However, this is **not an appropriate measure** because, unlike the WFD, the UWWTD does not aim to improve river water quality towards Good Ecological Status. The UWWTD merely limits the concentration of phosphorus in effluents from sewage treatment works to specified values (2mg/l or 1mg/l depending on the conurbation's size). Thus, costs may be incurred at a site to meet the requirements of the UWWTD without necessarily improving the receiving watercourse towards Good Ecological Status. We note that while all 72 of Yorkshire Water's phosphorus removal schemes defined in the WINEP spreadsheet (March 2019 release),[27] with a WFD Improvement driver are identified as either protecting or improving a discrete length of river, only 9 of the 50 UWWTD-driven phosphorus removal schemes are similarly identified. The entry in the column headed "River length improved or protected" is blank for the remaining 41 schemes.

3.14 We present below an alternative unit cost analysis where the unit is population equivalent served which is a measure of the scale of the site and therefore of the quantity of phosphorus in the untreated sewage. We note that Northumbrian Water has used the same denominator as we do here to demonstrate that its 2020-25 unit costs are no higher than its 2015-20 unit costs for phosphorus removal. Far from being almost twice as expensive as WFD driven schemes, this alternative analysis indicates that Yorkshire Water's UWWTD schemes actually involve lower unit capital cost.

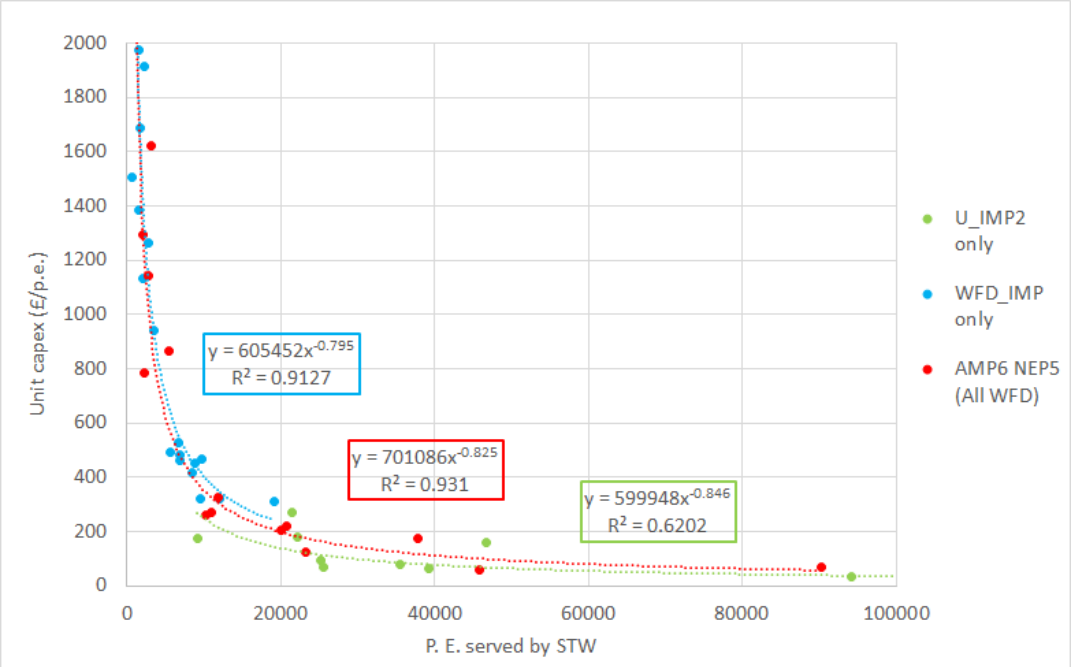
3.15 Our analysis uses scheme cost data from Yorkshire Water's 2020-25 P removal programme and is shown in figure 3.3 below. To simplify the analysis we have omitted sites with both WFD and UWWTD driven requirements, leaving 32 WFD (only) driven schemes (in blue) as one data series and 10 UWWTD (only) driven schemes (in green) as a second data series. The UWWTD driven schemes are at larger sites only and the WFD (only) schemes generally cater for smaller population equivalents. There is limited overlap between the size ranges covered by the different legislative drivers, but where there is overlap – roughly in the 10,000 - 20,000 population equivalent size range, the WFD trend line is clearly and significantly higher than the UWWTD trend line.

3.16 To extend the range over which the unit costs could be compared we added a third data set comprising the 15 phosphorus removal schemes in Yorkshire

[26] Yorkshire Water, Annex 11, May 2020, Oxera – 'Addressing Ofwat's Response to Yorkshire Water Services' Statement of Case', p.47, footnote 131
[27] Provided to the CMA by Anglian Water, Statement of Case, 'SOC312_WINEP'

Water's PR14 business plan (in red) for which we were provided with site level cost data. All 15 schemes had a WFD (only) driver. The trend line in this PR14 data mimics the pattern of the 2020-25 WFD data by being consistently and significantly higher than the UWWTD trend line.

Figure 3.3 Yorkshire Water's phosphorus removal scheme cost estimates (2017-18-RPI)



3.17 We acknowledge that the UWWTD requires on-site treatment precluding the adoption of potentially cheaper, more flexible catchment solutions. While this is true, a catchment solution is not always available and schemes with a sole WFD driver are, more often than not, delivered using the same on-site solution (generally chemical dosing) as an UWWTD driven scheme. Other than closing three sewage treatment works and transferring their flows to neighbouring sites, Yorkshire Water has not provided evidence it is planning catchment solutions for any of the 32 schemes in its 2020-25 phosphorus removal programme that do not have a UWWTD driver.

3.18 We note here that the proposed costs in its PR19 business plan for phosphorus removal, a large proportion of Yorkshire Water's 2020-25 environmental improvement programme, are of similar unit costs to those it proposed in its PR14 business plan. We show in our 'Cross-cutting response to companies' 27 May submissions' that Yorkshire Water expects to spend considerably less on its 2015-20 national environment programme than it requested in its PR14

business plan. We therefore demonstrate our PR19 allowance for phosphorus removal schemes was appropriate.

Business rates

3.19 In its 27 May submission,[28] Yorkshire Water argues that the uncertainty mechanism for business rates disadvantages companies and that it will only recover 75% of any increase in costs. Yorkshire Water highlights two areas where we had not taken proper account of information – a £2 million time limited reduction and the liability arising from prior period asset additions. Yorkshire Water argues that we did not make an allowance for the business rates liability arising from prior period asset additions.

Our response on business rates

3.20 We recognise that companies have limited control over the level of business rates and the effect of revaluations.

3.21 We consider that the 75:25 cost sharing mechanism provides companies with appropriate protection against increases to business rates, recognising that some factors are outside of companies' control, while retaining some incentive for companies to fully engage with the Valuation Office Agency to minimise the change in business rates and to affect the factors that companies can influence. It also protects customers by ensuring they share benefits with companies where the level of business rates is reduced.

3.22 In its Heathrow Q6 control, the CAA allowed an 80:20 business rates sharing arrangement.[29] It stated that it considered "that HAL (Heathrow Airport Limited) had the ability to have some influence on rates revaluation."[30] Additionally Ofcom does not include a true-up mechanism for BT's cumulo rates,[31] which are calculated using the same methodology as water companies' water service cumulo rates.

[28] Yorkshire Water, 'Response to Ofwat Reply', May 2020, pp.103-104, paragraphs 3.68.1-3.68-3
[29] CAA, Economic regulation at Heathrow from April 2014: Notice of granting the licence, February 2014, p.175 paragraph A47
[30] CAA, Economic regulation at Heathrow from April 2014: notice of the proposed licence, January 2014, p.172 paragraph A45
[31] Ofcom, Wholesale Local Access Market Review: Statement (Annexes 17-27), March 2018, p.140 paragraph A21.1

3.23 In its third party evidence to the CMA, Severn Trent Water states that:

> "…we also believe the approach to business rates needs to consider the role of incentives. As highlighted in our Draft Determination Response we think it is important that incentives are retained to reduce customer bills through the engagement with the Valuation Office Agency (thereby keeping bills low) whilst also acknowledging that to a large degree the costs are outside management control. Retaining some form of cost sharing on this item (and items with similar features where costs are primarily outside management control) is critical to maintaining this balance."[32]

3.24 We therefore consider that the **uncertainty mechanism provided sufficient protection for companies** while also protecting customers' interests.

3.25 We appreciate that Yorkshire Water's wholesale water business rates have been reduced by £2 million a year for this revaluation period and that it will be taken into account at the 2021 revaluation.

3.26 Business rates are calculated by multiplying the rateable value by a multiplier set by central government. At a revaluation both of these elements are redetermined. Even though we know that the Valuation Office Agency will add back in the rateable value associated with the £2 million adjustment we do not know what the multiplier will be. Therefore, we did not consider that there was sufficient information to make an adjustment.

[32] Severn Trent Water, CMA submission, 22 May 2020, p.7

4. Outcomes

Data on the common performance commitments

4.1 In its 27 May submission,[33] Yorkshire Water provides new analysis it considers shows that inconsistency in reporting the three "common level" measures (internal sewer flooding, water supply incidents and pollution incidents) and leakage. It argues this undermines our use of comparable information in setting these performance commitment levels.

4.2 While some companies were unable to satisfy the precise reporting requirements, they assessed that their non-compliance would not materially impact reporting. Therefore, while we acknowledge only full compliance will provide complete certainty, other water companies do not appear to agree the data is "unreliable" as Yorkshire Water suggests.[34]

4.3 We therefore consider **the information for the three common level measures is comparable enough for the purpose it was used** for, ie as a starting point to set the three upper quartile performance commitment levels. As we have set out before, we conducted considerable further analysis to satisfy ourselves that the levels were both stretching and achievable.[35]

4.4 We comment on specific aspects of the new analysis which Yorkshire Water provides below.

Internal Sewer Flooding

4.5 Yorkshire Water points out that, for internal sewer flooding, Anglian Water and United Utilities are not compliant for four of the five elements of reporting that help to classify incidents caused by severe weather. The reporting requirements that we developed with the industry included the capacity to exclude sewer flooding in severe weather. But, in the outturn, our PR19 methodology included all sewer flooding incidents in the PR19 measure as we want companies to be resilient and because it is difficult to classify incidents consistently. Anglian Water's and United Utilities' non-compliance with these

[33] Yorkshire Water, 'Response to Ofwat Reply', May 2020, pp.109-112, paragraphs 4.2.1 to 4.2.6
[34] Yorkshire Water, 'Response to Ofwat Reply', May 2020, p.12, paragraph 1.1.32
[35] Ofwat, Outcomes - response to common issues in companies' statements of case, May 2020, pp.35-43

classification elements of reporting therefore has little bearing on the PR19 performance commitment.

4.6 We analyse six elements that can affect reporting of the PR19 performance commitment in table 4.1. We include South West Water, which Yorkshire Water was unable to show in its table, as it only provided information on the six relevant elements.[36] It shows the majority of companies, including Anglian Water and United Utilities, comply with these elements.

Table 4.1: 2018-19 Companies' compliance in reporting internal sewer flooding,[37]

	Assets causing flooding	Internal or external flooding - internal	Internal or external flooding - external	Repeat incidents	Neigh - bouring properties	Records
ANH	Green	Green	Green	Green	Green	Green
HDD	Green	Green	Green	Green	Green	Green
NES	Green	Green	Green	Green	Green	Green
SVE	Green	Green	Green	Green	Green	Green
SWB	Green	Green	Green	Green	Green	Green
UUW	Green	Green	Green	Green	Green	Green
WSX	Green	Green	Green	Green	Green	Green
YKY	Green	Green	Green	Green	Green	Green
SRN	Green	Green	Green	Green	Amber	Green
TMS	Green	Green	Green	Green	Amber	Green
WSH	Amber	Amber	Amber	Green	Green	Green

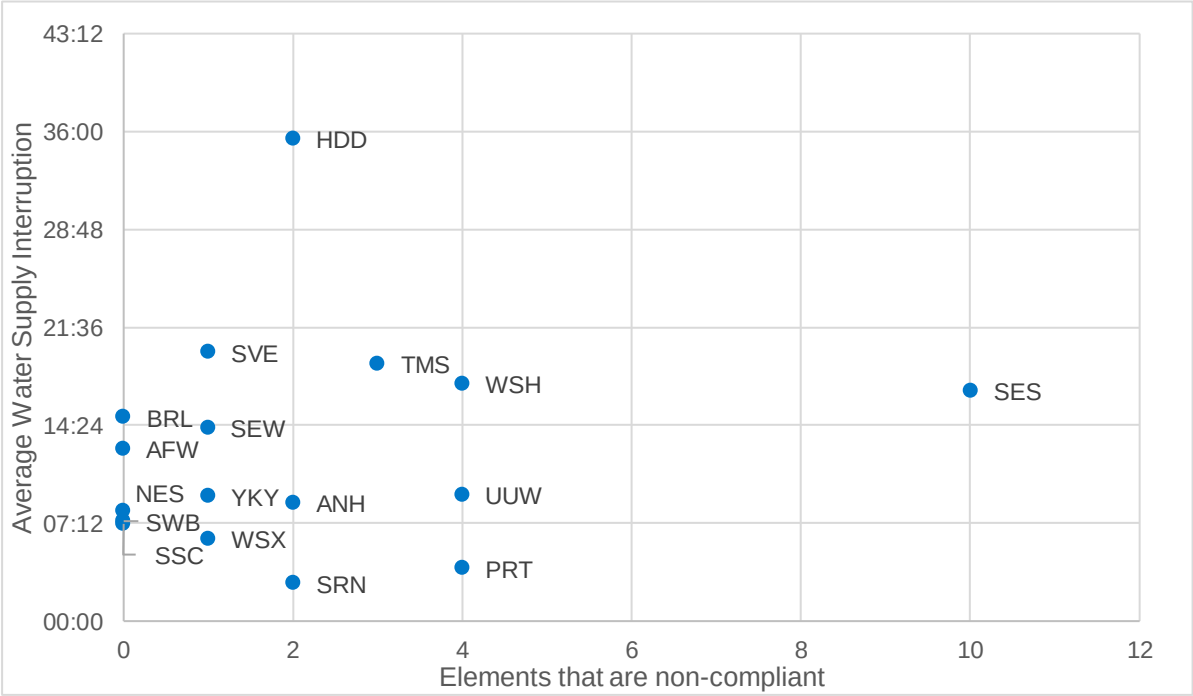
[36] South West Water set out that it is fully compliant against the six elements, but did not report compliance against other elements, 2019 Annual Performance Report, July 2019 (updated November 2019), p.53

[37] ANH = Anglian Water; HDD = Hafren Dyfrdwy; NES = Northumbrian Water; SVE = Severn Trent Water; SWB = South West Water; UUW= United Utilities; WSX = Wessex Water; YKY = Yorkshire Water; SRN = Southern Water; TMS = Thames Water; WSH = Dŵr Cymru.

Water supply interruptions

4.7 Yorkshire Water refers to analysis of compliance with water supply interruptions reporting in its Table 5, but this did not display in the documents that we received. We set out our analysis below. There is more variation in compliance for supply interruptions than for internal sewer flooding. But, with the exception of one company (SES Water), **no company considers that its non-compliance had a material impact on reporting**. 2018-19 performance was not correlated with the level of non-compliance as shown in figure 4.1, so there is no sign that a lack of compliance is systematically impacting reporting of performance.

Figure 4.1: 2018-19 non-compliance of companies in reporting water supply interruptions compared to the performance reported.



4.8 SES Water reported red ratings that suggest non-compliance may be affecting reporting and also has a significantly higher non-compliance level than other companies. However, we did not use comparable information alone to set water supply interruptions performance commitment levels. As set out previously,[38]

[38] Ofwat, Outcomes - response to common issues in companies' statements of case, May 2020, pp.35-43

we relaxed the performance commitment levels from the starting assessment of the forecast upper quartile as a consequence of our analysis. We consider that this was sufficient to mitigate any risk of noise in the data.

Pollution Incidents

4.9 While Yorkshire Water refers to reporting problems with all three common level measures, the last of these is pollution incidents and it provided no analysis on this performance commitment. This is not a new measure and we are not aware of any reporting problems during the period when companies were completing their business plans, 2017-19. This has been reported to the Environment Agency and Natural Resources Wales over many years.

Leakage

4.10 The third measure that Yorkshire Water chose to provide new information for was leakage. As we did not use comparable information to the same extent to set performance commitment levels for leakage, we do not provide a commentary on this information, but are happy to do so if the CMA would find this helpful.

Asset health

4.11 Yorkshire Water's 27 May submission includes new evidence in relation to asset health. This is a paper by Economic Insight, prepared for the company, in which it "sets out a framework for thinking about asset health in the context of incentive regulation and evaluates Ofwat's PR19 approach against it."[39] In our 4 May response, we repeated our concerns about the company's poor performance on asset health and the way it has historically managed its assets.[40] Yorkshire Water commissioned this paper in order to discuss these concerns. We also consider, in chapter 2 above, the findings of this Economic Insight paper in relation to the new evidence provided about the resilience impact of the final determination.

4.12 Economic Insight claims that: "(i) the need for incentivising asset health in a regulatory framework that incentivises customer facing outcomes has not been

[39] Yorkshire Water, Annex 04 – EI – Framework for Asset Health, May 2020, p.1
[40] Reference of the PR19 final determinations: Response to Yorkshire Water's statement of case, section 4, paragraph 4.8, p.76

established; (ii) there is a lack of a clear connection between the metrics that Ofwat has selected and the future ability of the company to deliver customer outcomes…",[41]

We do not agree with these comments. We have a robust and appropriate framework for asset health, which was extensively consulted on and accepted by the sector. It is also consistent with our resilience duty.

4.13 In consultation responses on the draft methodology, two companies considered that asset health metrics should not be included in the outcomes framework. However, Yorkshire Water was not among them. It said in its consultation response "We support better reflecting resilience in outcomes and we consider it important to express this as resilience of the services provided,"…"we support the inclusion of asset health related measures in the suite of common performance commitments and the provision of comparative information to customer and stakeholders,"…"Asset health related performance commitments are a good indicator of resilience in the long term. Alongside the proposed common performance commitments for water mains bursts and sewer collapses, we would support a level of partial standardisation for bespoke asset health performance commitments and sub measures...",[42] It also explicitly supported both mains bursts (asset health water) and sewer collapses (asset health wastewater) common performance commitment measures.[43]

4.14 Therefore, we are puzzled as to why Yorkshire Water now questions the framework for asset health, and the role and nature of the asset health performance commitments within it, having previously shown support for it and developed its business plan proposals for its performance commitments within that framework.

Asset health is only one aspect of our overall response to resilience.

4.15 There are five aspects of our approach to resilience performance commitments.

- Day-to-day operational resilience is covered by the common performance commitments on metrics such as water supply interruptions and internal sewer flooding.

[41] Yorkshire Water, Annex 04 – EI – Framework for Asset Health, May 2020, p.1
[42] Yorkshire Water, Consultation response on the outcomes framework for PR19, January 2017, p.21
[43] Yorkshire Water, Consultation response on the outcomes framework for PR19, January 2017, pp.6-7

- The underlying asset health of the industry is captured by the common asset health performance commitments, such as mains repairs and sewer collapses. Companies' bespoke performance commitments on asset health also cover company-specific asset health challenges (some of which could be taken from a 'long list' of suggested measures).
- We have two forward-looking resilience-related common performance commitments on the risk of severe restrictions in a drought and the risk of sewer flooding in a storm.
- Companies also proposed bespoke performance commitments to address their own particular resilience challenges.
- Companies also proposed performance commitments for five years, with longer-term projections for at least a further ten years.

4.16 We recognise that no set of asset health metrics will cover every aspect of company service resilience.

4.17 Our approach to asset health performance commitments, within our overall approach to resilience and setting stretching performance commitments, is set out in our final methodology.[44]

4.18 Economic Insight, on behalf of Yorkshire Water, questions whether we have a coherent definition or rationale for asset health or specific asset health performance commitments within the outcomes framework. In our final methodology we noted inter alia:

> "Asset health is a key area of network and service resilience. Asset health is an indicator of a company's ability to continue to perform its functions for the benefit of customers and the environment, now and in the future. Poor asset health is when assets are allowed to deteriorate to a point where the risk of failures (which will impact on customers and the environment) becomes unacceptably high. The health of companies' assets is a crucial element of achieving resilience in the water and wastewater sector in England and Wales."
>
> "Our approach to asset health does not focus on the age or condition of assets, but on the ability of assets to provide services into the future, which is what matters to customers."

[44] Delivering Water 2020: Our final methodology for the 2019 price review, Appendix 2: Delivering outcomes for customers, pp.24-29

> "We think common performance commitments are important for asset health so that customers can be assured that companies are maintaining their asset base appropriately to continue to be able deliver services effectively in the future."[45]

4.19 We also explained in our final methodology why we adopted specific asset health common performance commitments, including mains bursts and sewer collapses.[46]

It is important to have performance commitments across the whole value chain, not just rely on "customer service-related performance commitments" as implied by Economic Insight.[47]

4.20 We consider that we should hold companies to account for the health of their assets, rather than waiting for performance shortcomings to manifest in direct service impacts. We explained in more detail in our response to question one of Request for Information 002 why we think it is appropriate to have a number of separate performance commitments, rather than just relying on a small number of measures with direct customer impact. In particular, we noted there that:

> "There is some overlap and interaction between individual measures, but we think that all performance commitments are needed to ensure that companies are held to account for the service they provide to their customers across the entire value chain. Each performance commitment is measuring different aspects of companies' operational, maintenance and enhancement activities. Focusing on a single performance commitment could potentially distort measurement and focus management action on specific activities rather than wider customer and environmental goals and outcomes. Asset health performance commitments will eventually show as direct impacts on consumers (for example, leakage and supply interruptions). However, their use encourages companies to focus on longer term service provision and resilience."[48]

[45] Delivering Water 2020: Our final methodology for the 2019 price review, Appendix 2: Delivering outcomes for customers, pp.24-27
[46] See Delivering Water 2020: Our final methodology for the 2019 price review, Appendix 2: Delivering outcomes for customers, pp.18-20
[47] Yorkshire Water, Annex 04 – EI – Framework for Asset Health, May 2020, p.3
[48] Ofwat, Response to CMA's request for information 002 – Part 2, May 2020, p.2

We incentivise asset health specifically because we are worried about short termism by the companies

4.21 Several of the disputing companies, including Yorkshire Water, have implied that, in spite of their obligations as water companies, they may be more focused on the price control period at the expense of long-term resilience; and that the final determination may incentivise them to make trade-offs between areas of their operations so that that they can manage within regulatory allowances even though that may not be optimal from a long-term asset health and resilience viewpoint. We discuss Yorkshire Water's new evidence on the resilience impact of the final determination in chapter 2 above.

We were clear that we expected asset health performance to improve as part of the sector's commitment to improve its overall resilience.

4.22 Economic Insight suggests it is inappropriate to have improving performance commitment levels for asset health performance commitments, and that the objective of any approach to asset health should be to: "incentivise maintaining the levels of outcomes performance customers want over the longer term." [49] It equates this in the report to continuing to maintain stable asset health overall.

4.23 Historically, the sector targeted stable serviceability (the forerunner to asset health) across a basket of measures. Companies would be required to improve on those metrics within the basket where they were judged to be falling back, or where there were emerging challenges. For example, the serviceability approach to setting mains repairs levels was based on the average between the best year of performance and the next year (although there was some element of discretion to take into account atypical years). In practice, views of appropriate metrics and what constituted good levels of serviceability developed over time, and companies have been able to improve on asset health even when they weren't specifically provided with extra funding to do so. In those cases where companies were specifically funded for enhancing serviceability performance levels historical cost data for this is included in our econometric model input data. When this happened we applied a step change to our definition of stable serviceability in the measure in question.

4.24 We were clear at PR19 that we expected asset health performance to improve as part of the sector's commitment to improve its overall resilience and ultimately to improve service outcomes for customers (consistent with the

[49] Yorkshire Water, Annex 04 – EI – Framework for Asset Health, May 2020, p.4

output of Yorkshire Water's and wider customer engagement across the sector). We said in our final methodology: "We are not differentiating asset health common performance commitments from the others, in terms of the approach to setting performance levels. We consider that there is scope for companies to challenge themselves to improve their asset health performance, given the improvements we have seen in the sector's performance since privatisation and that at PR14 many of the asset health performance commitments involved stable performance rather than improvements. We agree with the respondent who considered stretching asset health performance commitments should drive innovation in the sector."[50]

4.25 Yorkshire Water's consultation response on our outcomes framework stated "We are focusing our plans on… ensuring our performance commitments are more stretching to deliver improved service levels for customers and protect the environment…"[51] This was followed through in the proposals for improving asset health performance commitment levels that the company put forward in its September 2018 business plan. Calibrating asset health performance commitments to a "stable" level as per the Economic Insight report therefore contradicts the value that customers placed on service improvement against some of these metrics, and contradicts the company's own arguments about correcting past under-performance and under-investment in maintaining its assets.

Our approach to asset health is not based on arbitrary and invalid comparisons

4.26 Notwithstanding the above, Economic Insight asserts in its report that "….(iii) the significant increases in asset health metrics expected by Ofwat are based on arbitrary and invalid comparisons, do not take account of any technical analysis, and are inconsistent with maintaining customer outcomes in the long run; (iv) genuine differences between companies have not been recognised, and Ofwat draws unfounded conclusions about the comparative performance of Yorkshire; and (v) the target levels that Ofwat has set cannot be consistent with its funding allowances."[52]

4.27 The asset health metrics are not among the three where we said we would set common performance commitment levels across the industry. Our approach to

[50] Delivering Water 2020: Our final methodology for the 2019 price review, Appendix 2: Delivering outcomes for customers, pp.57-58
[51] Yorkshire Water, Consultation response on the outcomes framework for PR19, January 2017, p 1.
[52] Yorkshire Water, Annex 04 – EI – Framework for Asset Health, p.1

the asset health metrics therefore explicitly allowed companies to propose stretching levels that were company-specific, taking account of their own circumstances, and we subsequently considered these in our assessments. Our comparative analyses informed our sector-wide views on good performance. We set different starting levels and improvement paths for each performance commitment for each company, where appropriate to do so. Each company has a different basket of bespoke asset health performance commitments and levels alongside the common commitments, reflecting its particular challenges, contrary to Economic Insight's assertion.[53]

4.28 We have set out elsewhere our detailed methodologies and approaches to setting performance commitment levels and outcome delivery incentives for asset health and other performance commitments.[54] Needless to say we do not consider Economic Insight's assertions to be valid given the rigorous and considered assessments that we undertook and the mechanisms and approaches within our methodology to account for company differences.

4.29 Similarly, our approaches to setting funding allowances consistent with performance commitment levels are considered in detail elsewhere including why, in practice, they fund improving performance (see our 4 May response and our note for the CMA on the cost of the base level of service).[55] We do not repeat them here. Despite a perceived lack of funding for improvement, and a lack of outperformance outcome delivery incentives on asset health at PR14, performance has been improving at the sector level (although not for all companies). We agree that it is important to conduct assessments of the cost of meeting performance commitment levels - as such companies are allowed under our framework to make claims for different levels of service or cost allowances where they can demonstrate that company-specific circumstances would justify that. We would expect, where relevant, companies to provide us with forward-looking engineering evidence to explain how the future is different from the past, knowing that our base cost allowance would be predicated on historical reported costs.

[53] Yorkshire Water, Annex 04 – EI – Framework for Asset Health, pp.14-15
[54] PR19 final determinations, Delivering outcomes for customers policy appendix, section 3.5, pp.53-71
[55] Ofwat, Introduction and overall stretch on costs and outcomes, May 2020; Ofwat, 'The cost of the base level of service,' June 2020

We consider that cross-industry comparisons are a valid source of information against which to assess companies' proposed asset health outcome delivery incentive rates, and on which to base our interventions

4.30 Economic Insight claims we are wrong to base asset health outcome delivery incentive rates on industry comparisons. We consider that cross-industry comparisons are a valid source of information against which to assess companies' proposed incentive rates, and on which to base any interventions. This is because, while we accept that there are legitimate reasons for companies' proposed rates to vary, they may also vary for reasons that are not legitimate.

4.31 For example companies' proposed outcome delivery incentive rates might be too high where they are based on an estimate of marginal cost which does not accurately represent the forward-looking efficient marginal cost. Similarly, in the other direction, companies may have a credible incentive to understate their outcome delivery incentive rates, for example, if they expect to underperform relative to the performance commitment level (based on their current and past performance or the relative degree of stretch implied by the performance commitment level relative to their forecast performance).

4.32 We consider that applying a reasonable range around the industry average, and a policy of intervention based on these ranges, is therefore appropriate. This sets outcome delivery incentive rates that, on the one hand, are more likely to reflect a forward looking estimate of efficient marginal cost, while on the other, provide sufficient protection for customers against underperformance and hold companies to account for past capital maintenance funding.

4.33 However, we only intervened where companies could not explain why they were outside this range. Furthermore, we note that applying reasonable ranges is just one of four checks we undertook in assessing companies' proposed asset health outcome delivery incentive rates, as set out in our final determinations policy appendix.[56] And, when we intervened, we allowed rates to vary across companies.

[56] PR19 final determinations, Delivering outcomes for customers policy appendix, December 2019, p.100, section 3.5

4.34 It is therefore not the case that "Ofwat's approach to the incentive rates for the common asset health PCs relies exclusively on industry comparisons",[57] as Economic Insight on behalf of Yorkshire Water claims.

Economic Insight claims that we ignored where companies proposed asset health rates based on customer research.

4.35 We consider that there are significant challenges involved in obtaining accurate customer valuations for asset health-related performance commitments. In particular, there is a risk that customer valuations are elicited in a way which does not capture the long-term impact of companies failing to properly maintain their assets. We note that many companies share this view and companies largely base their rates on marginal cost. Nevertheless, where companies proposed outcome delivery incentives based on evidence from customer research, we specifically assessed this evidence. This is captured by check 2 ("Company-specific evidence") in our suite of asset health outcome delivery incentive rates checks.[58] Economic Insight's assertion that "we have seen no evidence of Ofwat giving this any consideration",[59] is therefore not founded.

We are considering the potential for evolution of our framework for resilience and asset health as we move towards PR24.

4.36 In our January 2019 initial assessment of plans we made the direct connection between long-term operational resilience and asset health, and set a challenge to the companies to develop forward-looking risk-based asset health metrics collaboratively. There are many theoretical and practical issues to be worked through in developing these, some of which are identified in the Economic Insight report. We and the industry are taking forward work in this area in the context of a wider asset health and resilience project. We understand that a UK Water Industry Research (UKWIR) project on this is to be commissioned soon, and Yorkshire Water is already involved in this process with us. We welcome Economic Insight's contribution as a further input to our thinking on potential improvements to our approach to monitoring the performance of the sector, long-term planning and future price reviews.

[57] Yorkshire Water, Annex 04 – EI – Framework for Asset Health, p.19, section 5.2.2.
[58] PR19 final determinations: Delivering outcomes for customers policy appendix, December 2019, p.100, section 3.5.
[59] Yorkshire Water, Annex 04 – EI – Framework for Asset Health, p.19, section 5.2.2.

Sewer flooding and cellars

4.37 Yorkshire Water's 27 May submission repeats several arguments concerning internal sewer flooding that it made in its statement of case. We have previously addressed these in our response, and therefore do not repeat our assessment of them here.[60] However, the company also provides some new evidence in relation to the apparent prevalence of cellars within its region which it still considers to impact the service it provides to its customers. We note the company requests two changes from our final determinations, asking the CMA to:

- increase the time allowed to deliver the service improvements to customers required (by reducing the ambition on performance commitment levels in 2020-25); and
- increase its cost allowances to fund the revised 2020-25 performance commitment levels.[61]

4.38 Internal sewer flooding and cellars are a topic on which Yorkshire Water places great emphasis in its submission, and where it has sought to make some bold claims. However, for the reasons set out below we suggest that none of these arguments are good or provide anything approaching the quality of evidence that we and the CMA would need properly to assess their case.

Yorkshire Water has some of the worst sewer flooding performance in the sector and customers should not be asked to pay for catch-up in service levels.

4.39 Yorkshire Water's 27 May submission provides new internal sewer flooding outturn information for 2019-20. We are disappointed to see that the company's actual performance showed a 34% reduction from the level it had forecast. We remain very concerned with the company's performance for internal sewer flooding and note that the company's own business plan stated the need for significant improvements to service and demonstrated how its performance was poor compared to the rest of the sector.[62]

[60] Reference of the PR19 final determinations: Response to Yorkshire Water's statement of case, March 2020, pp.81-88, section 4, paragraphs 4.24-4.49,
[61] Yorkshire Water, 'Response to Ofwat Reply', May 2020, pp 262-267, section 12, paragraphs 12.1.31-12.1.37 and 12.1.44-12.1.51
[62] Yorkshire Water, Exhibit 66 - 155, 31_Internal Sewer Flooding_19c.pdf, Yorkshire Water, September 2018 business plan submissions, appendix 19c, internal sewer flooding

The company fails to robustly demonstrate that the apparent prevalence of cellars in its region are the sole cause of its poor performance.

4.40 We have repeatedly stated that the company failed to provide validated and representative evidence to satisfy our high evidential bar regarding the prevalence of cellars in its region.[63] CCW agrees that this evidence was very weak.[64]

4.41 The company has now provided some additional information from the 2001 census, which appears to show that the proportion of cellars in the region is 6.2% (compared to national average of 2.4%).[65]

4.42 This new evidence, which is still almost 20 years old, validates the concerns we raised with respect to the age and representativeness of the original evidence, since it suggests a significantly different proportion of cellars (6.2% compared to 17%).

4.43 The company's new evidence includes a quantitative assessment of the sewer flooding outturn performance over 2018-19 and 2019-20. In this assessment, the number of sewer flooding incidents (for Yorkshire Water only) is adjusted based on a hypothetical scenario where the company's proportion of cellars is aligned to the apparent industry average. The analysis uses the industry average value for cellars from both the MORI (1998) and Census (2001) data.[66] This hypothetical analysis appears to show that Yorkshire Water's performance would be improved by circa 50% if the impact of cellars is removed placing the company as a "mid-pack" performer.

4.44 We note other companies' performance appears to have not been similarly adjusted to account for their proportions of cellars and that the analysis in relation to relative performance has not been conducted on the common PR19 definition of the measure.[67] This raises concerns about its validity and the company itself states the analysis is "crude".[68] We also consider that the company needs to provide the underlying source data, detail of the adjustments

[63] Ofwat, Reference of the PR19 final determinations: Response to Yorkshire Water's statement of case, May 2020, pp.81-88, section 4
[64] See paragraphs 8.5-8.7 of CCW's third party submission to the CMA
[65] Yorkshire Water, Annex 06 – YWS – Internal sewer flooding case study, May 2020, p.8
[66] Yorkshire Water, Annex 06 – YWS – Internal sewer flooding case study, May 2020, p.8
[67] Yorkshire Water, Annex 06 – YWS – Internal sewer flooding case study, May 2020, p.9
[68] Yorkshire Water, 'Response to Ofwat Reply', May 2020, p.145, section 4, paragraph 4.40.5.

made to account for house building and the calculation steps it has used for us to be able to replicate its calculation.

4.45 Despite this proffered analysis, we remain concerned that the impact of cellars is not fully understood by the company. The company's own business plan suggests that the impact of cellars has varied over time.[69] Additionally, the company's business plan also suggests that when the impact of cellars is removed, the company's performance is still some of the worst in the sector.[70]

The company does not sufficiently justify either its costs or the appropriateness of solutions.

4.46 Notwithstanding the points above, the new information provided by the company still fails to evidence that the activities (and therefore costs) are appropriate and efficient. The new evidence states that solutions have to be delivered to 260,000 properties (a value apparently not based on the new 2001 census information which would be closer to 140,000) which is a notable increase from the 200,000 originally proposed.[71] More concerning, this appears to be a blanket roll-out at every property with a cellar rather than a prioritised or risk based assessment of which properties need solutions. Customers may therefore end up paying for solutions that are not required.

4.47 Within the 260,000 properties, the company plans to install non-return valves at 26,000 properties with cellars that are directly connected to the sewer over the 2020-25 period. This will be followed by installation of a further 26,000 over the 2025-30 period. This forecast does not seem to be based on the new 2001 census information for properties that are cellared and uses the company's own estimate of cellars with direct sewer connections. The company states that it derived a number for cellars with direct sewer connections (20%) from its historical sewer flooding records.[72] We note that the new evidence provided by the company states that where "the property elevation is higher than the upstream manhole elevation, for modelling purposes, an internal flooding is not considered possible".[73] The company does not appear to have factored the fact that, by its own admission, in these scenarios, the cellar will not flood into its

[69] Yorkshire Water, Statement of Case Exhibit 066-001 – YW PR19 Business plan.pdf, September 2018 p.155 chapter 15
[70] Yorkshire Water, Annex 06 – YWS – Internal sewer flooding case study, May 2020, pp.3-4
[71] Yorkshire Water, Statement of Case Exhibit 070, Yorkshire Water Follow-up representation meeting with Ofwat – 16 October 2019, p.14
[72] Yorkshire Water, 'Response to Ofwat Reply', May 2020, p. 148, section 4, paragraph 4.41.12
[73] Yorkshire Water, Annex 06 – YWS – Internal sewer flooding case study, May 2020, p.5

estimates of the number of non-return valves required.[74] In the new evidence the company provides limited information on its plans (eg activities, costs, strategies) for the remaining 80% of properties with cellars that are not directly connected to sewer.

4.48 In the new evidence the company has reiterated that property access and its challenges "dictates the length of time needed to implement the solution and this is reflected in the suggested glidepath."[75] The company has not adequately evidenced how an increase in the cost allowance relates to its proposed levels of activity and the glidepath for performance improvements.

4.49 In order for us to make an additional cost allowance, we would expect a detailed cost breakdown for each type of cellared property, and a full options appraisal to demonstrate that the company has considered all options in light of the new evidence. It is not clear why fitting individual non-return valves is the optimal solution rather than, say, disconnecting surface water from the network. We do not consider the company has provided sufficient evidence in this respect.

4.50 Additionally the company has not considered its costs in the context of the implicit allowance it receives through the base model. We set out in our final methodology,[76] that for adjustments to our base cost model allowances we would not only make upwards adjustments, but that we would make symmetrical downwards adjustments to other company allowances as appropriate. This was why we had a high evidential bar for accepting cost adjustments. Notably, Yorkshire Water does not consider how it may benefit from being drier compared to other companies such as United Utilities, Welsh Water and South West Water which may experience greater rainfall. This is important, as there may be countervailing factors which reduce its allowance, and without considering them there is a risk of over-rewarding the company.

Water supply interruptions outcome delivery incentive rate

4.51 In its 27 May submission, Yorkshire Water claims that Ofwat has "selectively removed" one of the evidence sources used in the company's triangulation of its water supply interruptions outcome delivery incentive rate, to arrive at a

[74] Yorkshire Water, Annex 06 – YWS – Internal sewer flooding case study, May 2020, p.5
[75] Yorkshire Water, Annex 06 – YWS – Internal sewer flooding case study, May 2020, p.2
[76] Ofwat, Our final methodology for the 2019 price review, December 2017, p.149

result more consistent with the industry average.[77] We disagree with Yorkshire Water's claim that Ofwat exercised its discretion "selectively". The data point was removed from the triangulation based on our assessment of the relative quality of the underlying data source and its congruence with the data sources, as per best practice in triangulating customer research.

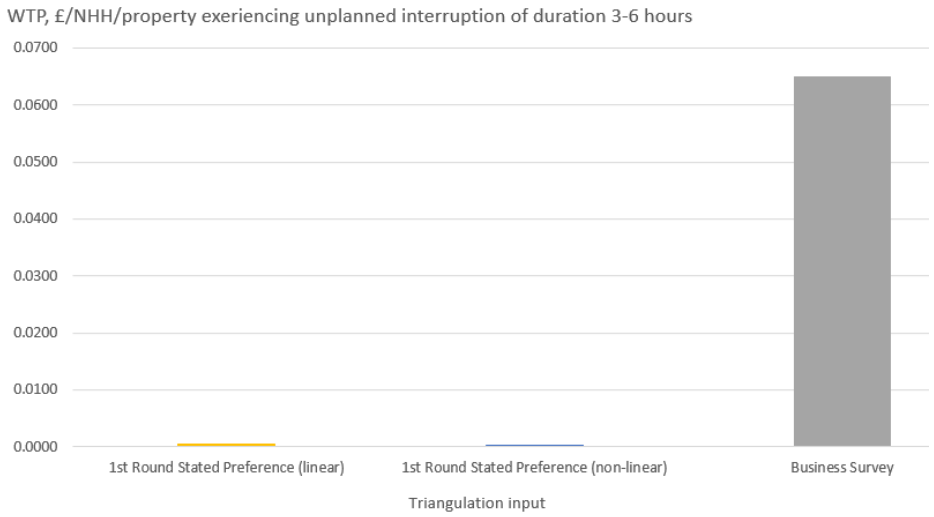
4.52 More specifically the data point in question, which was obtained from a survey of businesses customers, was over 100 times larger than the values derived from the company's own stated preference willingness to pay research for business customers (see figure 4.2).

4.53 We attach more weight to the results of the company's own non-household stated preference willingness to pay research, as this is an established and robust method of eliciting customers' valuations for service improvement by explicitly testing trade-offs in service levels and bill impacts for targeted blockage reduction activities, for example. In contrast the business survey, which adopts a revealed preference approach, is not a theoretically robust method of deriving customers' maximum willingness to pay values.[78] Furthermore, the results were derived from the responses of only 33 customers.[79] This contrasts with the sample of 542 business customers from which the stated preference willingness to pay values were derived.[80] We also note that Yorkshire Water's own data triangulation report states that "the Revealed Preference results for business customers were typically higher than the Stated Preference results. This is contrary to expectations and may be due to methodological/definitional differences between the two approaches".[81]

4.54 Given these problems with the robustness of the research, and the fact that the inclusion of this data point appears to be driving Yorkshire Water's outcome delivery incentive rate as an outlier compared to other companies' rates, we consider removing it from the triangulation was appropriate.

[77] Yorkshire Water, 'Response to Ofwat Reply', May 2020, p.130
[78] For a discussion of the limitations of revealed preference measures of willingness to pay see HM Treasury, Valuation Techniques for Social Cost-Benefit Analysis: Stated Preference, Revealed Preference and Subjective Well-being Approaches, p.30
[79] Yorkshire Water Business Plan, Appendix 5h: Understanding Customer Values revealed preference business survey report, p.26-27
[80] Yorkshire Water Business Plan, Appendix 5e: Understanding Customer Values stated preference report, p.0
[81] Yorkshire Water Business Plan, Appendix 5d: Understanding Customer Values data triangulation report. p.23

Figure 4.2: Data inputs used by Yorkshire Water in its triangulation of its Water Supply Interruptions outcome delivery incentive rate



Mains repairs

4.55 Yorkshire Water's 27 May submission repeats several arguments concerning mains repairs that it made in its statement of case. We have previously addressed these and so do not repeat them here.[82] However, the company also provides some new evidence in relation to weather impacts on its historical performance.[83]

4.56 The impact of extreme weather on performance with respect to mains repairs is a well-established concept. It is accepted there are year-on-year fluctuations in performance which could be attributed to weather impacts. For example, extreme cold followed by a rapid thaw can cause ground movement and pipe fractures, as seen in the freeze/thaw event in 2017-18. Very dry weather can also cause ground movement as seen in the summer of 2018.

4.57 Yorkshire Water provides additional evidence to show periods of benign weather, such as warm winters can result in lower than "normal" bursts, resulting in good performance. But the company does not provide evidence of other weather periods which may have impacted performance, therefore it does not provide a balanced view.

[82] In this submission we have not repeated evidence already presented regarding the linkage between mains repairs and leakage. As presented previously (for example, 'Reference of the PR19 final determinations: Key elements of the methodology appendix', p.11, section 4, paragraph 4.12,), companies have a wide range of activities and solutions they can adopt to reduce leakage
[83] Yorkshire Water, Annex 05 - YWS - Leakage and Mains Repair, 27 May 2020

4.58 There is some evidence to suggest that 2015-16, in particular, was a warm winter. Companies did not provide any evidence to demonstrate this type of impact in their own regions, or which particular years it might have impacted mains repairs performance. We took account of external impacts on performance by increasing the number of years we used to set the performance commitment level from three years to five in the final determinations.

4.59 Yorkshire Water also continues selectively to quote the UKWIR report which investigates the impact of leakage control on mains repairs. In its 27 May submission, the company quotes from the report *"*there is no clear evidence of an offsetting of increased detected leaks by fewer reported leaks as leakage is reduced. As a result, the total number of leak repairs would be expected to increase. The implication is that there are very few leaks that grow from being detectable to being reported at leakage levels currently observed in the UK*"*.[84] The company does not quote the main conclusion, which is *"*There is likely to be a small increase in the mains asset health measure used in England & Wales if leakage is reduced through Active Leakage Control*"*.[85] The emphasis of this conclusion is that there is likely only to be a small increase in the mains repairs measure. This is what we have allowed for in our final determination.

Sewer collapses

4.60 Yorkshire Water's 27 May submission repeats several arguments concerning sewer collapses that it made in its statement of case. We have previously addressed these in our response and so do not repeat our submissions here. However, the company also makes some incorrect statements about the reporting methodology. In particular, it states that a late change in the methodology means that we did not make like for like comparisons.

4.61 The sewer collapses measure was included as part of the shadow reporting dataset for the 2017-18 reporting year with a definition that had been developed in collaboration with companies. In February 2019 all companies, including Yorkshire Water, proposed a limited number of revisions to the reporting guidance aimed at providing clarity in reporting. We updated the

[84]Yorkshire Water's exhibit 45, UKWIR_impact of reductions in leakage levels on reported and detected leak repair. Published 2019: p.20 & Exec Summary
[85]Yorkshire Water's exhibit 45, UKWIR_impact of reductions in leakage levels on reported and detected leak repair. Published 2019: p.21 & Exec Summary

definition in response to the companies' proposals and published it in early April 2019, in time for companies to report the 2018-19 period.

4.62 Yorkshire Water did not state that the revised March 2019 definition impacted its performance commitment level, but rather that it did not have sufficient time to understand the impact. At least three other companies were able to understand the impact and provide revised performance commitment levels.[86] It should also be noted that Yorkshire Water had incorrectly interpreted the previous definition to include proactive collapses, which are excluded from this measure. We informed the company of this error in an initial assessment of business plan stage action.[87] This error accounts for the apparent improvement in its sewer collapses shadow reporting between 2017-18 and 2018-19. In its 2018-19 annual performance report commentary,[88] Yorkshire Water indicated that only one element of reporting against the sewer collapses definition was considered "amber", and that it expected to be fully compliant by 2019-20. Therefore, we had no additional concerns around definitional compliance when setting the performance commitment level in the final determination.

4.63 We acknowledged that the change in definition in March 2019 would make it difficult to conduct meaningful comparative analysis. We therefore did not use historical data to provide a projection of a "good" performance level of sewer collapses as we did with mains repairs. Instead **we used the forecast median level to set the "good" level**. We based company interventions on each company's own historical performance and not on industry comparative levels.

Outcome delivery incentive return on regulated equity (RoRE) risk analysis

4.64 Yorkshire Water's 27 May submission contains a number of points related to outcome delivery incentive RoRE risk analysis. We do not consider that there is any significant new argument and so provide no direct comment. However, as Yorkshire Water continues to promote its risk analysis, we highlight that any risk analysis is dependent on simplifications and assumptions. We consider that

[86] These companies were Severn Trent Water, United Utilities and Wessex Water
[87] Ofwat, Yorkshire Water delivering outcomes for customers detailed actions, Jan 2019, pp.24-25
[88] Yorkshire Water, Annual Performance Report 2018-19 Supporting commentary for Table 3S, shadow reporting of new definition data

many of the criticisms that Yorkshire Water makes of our risk analysis are also applicable to its own risk analysis.

4.65 For instance, underpinning its approach is an assumption that the probability distribution function for every performance commitment across the industry within a price control, specified as the percentage difference from the performance commitment level, is the same.[89] Whilst this may be a pragmatic assumption for broad brush analysis, we consider that analysis built on this assumption will be imprecise as some performance commitments are more volatile than others. Additionally, the approach of assessing risk as a percentage difference to the performance commitment level means that the risk analysis is centred around the proposed performance commitment levels. Effectively, the expected performance level is whatever Yorkshire Water chooses it to be.

4.66 We suggest that the CMA carefully reviews Yorkshire Water's risk analysis before placing weight on it.

[89] Yorkshire Water, Statement of Case Exhibit 066-077 - Appendix 13b - ODI RoRE Risk Analysis - a report for Yorkshire Water.pdf, August 2018, p.26

5. Overall stretch across costs and outcomes

5.1 Yorkshire Water's 27 May 2020 submission repeats several arguments concerning overall stretch across costs and outcomes that it made in its Statement of Case. We have previously addressed these in our 4 May response,[90] and so do not repeat them here. The company raises some new points on the overall level of stretch across costs and outcomes in common with those of other companies, and so we address them in our 'Cross-cutting response to companies' 27 May submissions' document.

5.2 One new piece of evidence was submitted by Yorkshire Water, making points specific to the company, and to that we respond here.

A report by Yorkshire Water regarding overall stretch across costs and outcomes

5.3 Yorkshire Water has submitted an Economic Insight report to the CMA, with its 27 May submission.[91] This is a new piece of evidence.

5.4 The report quantifies the underfunding in the base cost allowance to Yorkshire Water to achieve its PR19 performance commitment levels. It proposes substantial additional funding. We summarise Economic Insight's methodology, and demonstrate **the assumptions it relies on are not plausible**.

5.5 The report uses two methods to quantify underfunding. First, it uses a "bottom-up" approach.[92] It calculates the difference between the historical achieved performance by the three most cost efficient companies and the average performance commitment level for Yorkshire Water in 2020-25. It multiples this performance difference by estimates of the marginal cost of performance improvements.

5.6 Second, it uses a "top-down" approach,[93] of data envelopment analysis, an econometric technique that allows for multiple inputs (eg costs) and outputs (eg quantity metrics and quality metrics). It uses historical cost and performance

[90] Ofwat, Response to Yorkshire Water's statement of case, May 2020 and Ofwat, Introduction and overall stretch on costs and outcomes, May 2020
[91] Yorkshire Water's Annex 11, Economic Insight report for Yorkshire Water, 'The additional funding needed to reach upper quartile performance', 27 May 2020
[92] Ibid, pp.2-3 and pp.8-9, Annex 1
[93] Ibid, p.3 and pp.10-15, Annex 2

data for each company and creates a hypothetical "Future Yorkshire" in the dataset, based on Yorkshire Water's 2020-25 business plan additional costs for performance improvements, and its performance levels. It then compares the outputs of the model for "Future Yorkshire" and our benchmark company.

Our response - The "bottom-up" methodology used by Yorkshire Water is flawed

5.7 The methodology rests on an incorrect assumption that expenditure is driven entirely by the absolute level of performance, not improvements in performance. In particular, Economic Insight's methodology assumes that we funded the most efficient companies in PR14 to achieve performance level X, and so Yorkshire Water should receive additional funding at PR19 for any performance which is beyond level X.

5.8 For example, for wholesale wastewater, our cost efficiency analysis concluded that Severn Trent Water was the most efficient cost company over the past five years. It achieved an average performance of 2.3 internal sewer flooding incidents per 10,000 connections over the last eight years. Yorkshire Water's average performance commitment level for 2020-25 is 1.5. Economic Insight concludes that the efficient cost allowance for 2020-25 is sufficient to achieve performance of 2.3, and so Yorkshire Water should receive additional funding for the 0.8 increment to Severn Trent Water's actual performance.[94]

5.9 This approach erroneously assumes absolute performance levels drives costs, not improvements. In reality, Economic Insight misunderstands the engineering and cost reality of performance in the sector. Improving performance is more expensive than maintaining a given level of performance, as many of the costs associated with improvement are one-off, such as replacing an old pipe, and would continue to provide benefits in future periods.

5.10 Our PR19 base expenditure econometric models and therefore our PR19 cost baselines **incorporate the historical costs incurred by the companies to improve performance** to upper quartile in the PR14 period on water supply interruptions, internal sewer flooding and pollution incidents. Any one-off costs incurred to improve performance in the historical period would not need to be incurred again to maintain performance going forward. This effectively provides an allowance for companies to improve performance further in future periods.

[94] Annex 17 of Yorkshire Water's 27 May 2020 submission, 'DEA results-stc-May 2020.xlsx'

5.11 For example, Severn Trent Water improved its performance in internal sewer flooding from 3.0 in 2014-15 (ie the end of the PR09 price control period) to 1.9 in 2018-19,[95] (the latest available data). The costs Severn Trent Water incurred to make this improvement of 1.1 incidents by 2018-19 will be included in its historical costs and therefore the efficient cost benchmark. By contrast, Yorkshire Water's 2020-25 average level of 1.5 is only 0.4 better than Severn Trent Water's actual performance in 2018-19.

5.12 Given that our cost baselines included the cost of improving performance by far more than 0.4, we consider that Yorkshire Water had sufficient funding to meet its final determination performance commitment levels.

5.13 We also question some of the more detailed aspects of Economic Insight's approach,[96] although we consider this of secondary importance given the fundamental problem discussed above. Our concerns include:

- It does not assume any improvements over time, for example as a result of technological progress, productivity gains or similar;
- It takes simple averages of historical data, rather than focusing on Yorkshire Water's actual starting performance in 2020 at the beginning of the five year period.[97] As companies will be undertaking expenditure throughout the period to improve performance, it is the 2019-20 performance that is most relevant, not a simple historical average;
- It takes a simple average of the incremental costs of improving performance compared to the three or four,[98] most efficient companies, despite their very different performance levels, and does not adjust for their relative efficiency;
- It uses company marginal cost data proposed by the companies in their outcome delivery incentive rate calculations. We note that this varies substantially between companies, and that we intervened in some of these outcome delivery incentive rates where the rates proposed were not sufficiently evidenced;
- The analysis does not consider where we allowed funding beyond the base allowance. Where companies demonstrated they were going beyond our base cost allowances, we provided additional funding, for example

[95] Based on shadow reporting Annual Performance Report 2018-19 data. Economic Insight's report uses 1.8, based on the company App1 submission forecasts
[96] Annex 1 of Economic Insight report for Yorkshire Water, 'The additional funding needed to reach upper quartile performance', 27 May 2020
[97] As 2019-20 data is not yet available, this would entail using 2018-19 data
[98] For wastewater and water respectively

£16 million for Yorkshire Water to reduce the risk of sewer flooding in Hull.[99]

Our response - The "top-down" methodology used by Yorkshire Water is flawed

5.14 Economic Insight uses data envelope analysis to demonstrate a relationship between costs and outcomes. There are three main reasons why **its estimation approach is fundamentally flawed.**

5.15 First, as part of our model development, we tested a range of different outcomes in our models. None of these variables made the final model selection either because it led to a perverse incentive (eg higher allowances for poorer service quality) or did not produce sensible and/or statistically significant results.[100] Economic Insight avoids this result with a very simple model specification that assumes the relationship between costs and outcomes, but this does not solve the problem that the relationship between costs and outcomes is complex.

5.16 Second, Economic Insight's model,[101] is an oversimplification. It uses only one cost driver (distribution input for water, load for wastewater), and two outcomes variables.[102] As our own and others' modelling has demonstrated, there are several important exogenous cost drivers, such as population density, and treatment complexity. There are also numerous other outcomes variables beyond the two used by Economic Insight. Both the excluded exogenous cost drivers and other outcomes variables could be correlated with the outcomes measures used by Economic Insight, introducing a clear risk of omitted variable bias.

5.17 Economic Insight runs the model as five completely separate annual models, resulting in a very small sample size (11 in the wastewater model, including "Future Yorkshire"). Economic Insight also assumes the variable returns to scale variant of data envelope analysis, where companies are only compared to those of similar size. This is an important and questionable assumption – all econometric modelling in this sector, and others, such as electricity and gas, allows comparison between companies of varying sizes. There is no clear

[99] For example, see our 'Reference of the PR19 final determinations: Outcomes - response to common issues in companies' statements of case, May 2020, p. 7, paragraph 2.2.
[100] Ofwat, Cost efficiency – response to common issues in companies' statements of case, May 2020
[101] As set out in Annex 02 of Economic Insight report for Yorkshire Water, 'The additional funding needed to reach upper quartile performance', 27 May 2020
[102] Internal Sewer Flooding and Pollution Incidents for wastewater; leakage and water supply interruptions for water

underlying economic rationale to compare only companies of a similar size. This unnecessarily reduces the number of companies to which Yorkshire Water is compared.

5.18 We conclude the model is both oversimplified and biased, and so is not an appropriate basis for requesting large changes to cost allowances.

5.19 The implications of some of these design choices are demonstrated by the detailed model results.[103] In each year, Economic Insight estimates that (for wastewater) at least four firms are at the frontier, including Thames Water in every year. The results for "Future Yorkshire" suggest it is efficient in early years, and inefficient in later years. This appears to be counterintuitive and is likely to reflect Yorkshire Water's actual spending profile during 2015-20, rather than any particular relationship between outcomes and costs.

5.20 Third, Economic Insight's top-down methodology suffers from the same problem as the bottom-up. It does not recognise that our base cost allowance includes funding for improving performance, not just maintaining an absolute level of performance, and that one-off spend can produce multi-year improvements. This means that spend in Year n will affect performance in Year n+1, n+2 and so on. Economic Insight's modelling approach does not recognise this, and so it is unsurprising the approach yields implausible conclusions.

[103] Annex 17 of Yorkshire Water's 27 May 2020 submission, 'DEA results-stc-May 2020.xlsx'

6. Past delivery material: WRFIM

6.1 In discussing our approach to the PR14 wholesale revenue forecasting incentive mechanism (WRFIM), Yorkshire Water claims our calculation of the revised allowance, accounting for the error in its business plan for third party costs was wrong, using an incorrect percentage figure applied to calculate the allowance. It also restates that its error is unambiguous, with its business plan forecast of third party income each year the same as its 2012-13 reported actual income, and asserts that the company applied no forecast of growth.[104]

Our response on WRFIM

6.2 We disagree with Yorkshire Water's claims. It has not understood what we did in calculating the impact of the error in the PR14 business plan. **We stand by the calculations we presented** in the 4 May response, which included the impact of additional income as grants and contributions. However, we consider it would be helpful if we explain the misunderstandings and errors in Yorkshire Water's calculations.

6.3 Our allowance for third party costs at PR14 was calculated prior to the menu model. We applied the company's own historical third party cost recovery rate to its business plan third party income to make an appropriate third party cost allowance. So, the 114% was calculated from the company's own historical recovery rate of third party costs, as we explained our published PR14 cost model. **The 114% is nothing to do with the menu**, contrary to what the company wrongly asserts.[105]

6.4 Yorkshire Water also claims that in our calculation of the revised allowance we omitted the required totex menu adjustment to include the impact of the connections charges within the "costs excluded from the menu". We considered that it is not appropriate to include the impact of the menu adjustments in our calculations. This is because Yorkshire Water had a choice about its menu position, so it is not possible to be certain what the impact of the menu model would have been on either the revenue or RCV. This was why we did not make

[104] Yorkshire Water, 'Response to Ofwat Reply', May 2020, p.236, paragraph 10.3.2
[105] Ofwat, Yorkshire Water PR14 water final cost threshold model, Tab P3 cell W65 says "…Our approach is to calculate for water and wastewater separately the percentage of third party revenue recovered relative to third party costs over the period 2006-07 to 2010-11 (the most recent 5 years we have matching costs and income). We have then applied this percentage to your forecast wholesale third party income reported in business plans for each of water and wastewater, and used the resulting estimates as estimates of third party costs for each of water and wastewater.

the automatic changes in the menu model in our 4 May response. For completeness we have now rerun our calculation of the revised allowance to include the impact of the PR14 menu model, which alters the menu position from that of the PR14 final determination.

6.5 Our updated calculation of the revised allowance results in a slightly higher allowed revenue of £27.5 million (our 4 May response referred to a higher allowed revenue of £27 million) and a reduction in the 2019-20 closing RCV of £6.5 million. Our 4 May response referred to a lower 2019-20 closing RCV of £10 million, calculated by not changing the menu position. We provide a flow chart of the relevant PR14 cost models and the changes in revenues and RCV they produce in Appendix A1 to this document, in 2012-13 prices, including the menu model. The flow chart clearly shows both the reduction in allowed third party costs of £25.3 million and the increase in grants and contributions of £22.2 million.

6.6 Yorkshire Water has stated that it based its PR14 business plan forecasts for connection charges on actual reported income received in 2012-13. This assumption is **inconsistent with the number of new connections which the company forecast** in its PR14 business plan. The reported number of new connections in 2012-13 was 9,135 but in its PR14 business plan Yorkshire Water forecast an annual average of 20,386 new connections over 2015-20. It was reasonable to assume that Yorkshire Water would forecast a different level of income from new connections than that reported in 2012-13 to match the greatly increased forecast of new connections. Hence, the error is not unambiguous. Allowing Yorkshire Water an additional £44 million in revenue would not be the correct amount to correct for the error, and is not appropriate when the forecast of income is not clearly the figures Yorkshire Water claims.

A1 WRFIM detailed PR14 model flows

PR14 Cost modelling flowchart

				Final determination	Revised modelling	Delta
PL14W003 - water baseline	No impact on this model					
PL14W011 Water wholesale	Inputs	Worksheet P3	Row 132	32.54	7.23	(25.31)
	Ouputs	C00026_W011	Water: Costs excluded from Ofwat menu	55.46	30.15	(25.31)
		C00604_W011	Water - Company view of expenditure for Ofwat menu exclusions	66.88	41.57	(25.31)
PL14W004 - menu model	Inputs	C00604_W011	Water - Company view of expenditure for Ofwat menu exclusions	66.88	41.57	(25.31)
	Outputs	C00009_W004	Water - Allowed expenditure from menu	1,483.67	1,490.00	6.33
		C00011_W004	Water - Additional income from menu	10.42	7.38	(3.04)
		C00729_W004	Water - Menu choice (ratio)	94.33	96.01	1.68
PL14WS14007 - total cost model	Inputs	C00026_W011	Water: Costs excluded from Ofwat menu	55.46	30.15	(25.31)
		C00009_W004	Water - Allowed expenditure from menu	1,483.67	1,490.00	6.33
	Outputs	W3018_WS07	Water IRE (amount for totex CR)	261.95	258.68	(3.27)
		W3019_WS07	Water Infrastructure Enhancement (amount for totex CR)	26.05	25.75	(0.29)
		W3020_WS07	Water MNI (amount for totex CR)	329.73	325.62	(4.11)
		W3021_WS07	Water New capital expenditure (amount for totex CR)	95.98	94.80	(1.17)
		BM351TAS_W	Water Operating expenditure (amount for totex CR)	802.72	792.58	(10.13)
PL14A001 - financial model	Inputs	W3018_WS07	Water IRE (amount for totex CR)	261.95	258.68	(3.27)
		W3019_WS07	Water Infrastructure Enhancement (amount for totex CR)	26.05	25.75	(0.29)
		W3020_WS07	Water MNI (amount for totex CR)	329.73	325.62	(4.11)
		W3021_WS07	Water New capital expenditure (amount for totex CR)	95.98	94.80	(1.17)
		BM351TAS_W	Water Operating expenditure (amount for totex CR)	802.72	792.58	(10.13)
		W9008	Third party services	28.06	5.86	(22.20)
		W9013	Capital contributions from connection and infrastructure charges	41.81	64.01	22.20
		C00011_W004	Water - Additional income from menu	10.42	7.38	(3.04)
	Outputs	PAYG		952.23	940.26	(11.96)
		Pension Deficit Repair Allowance		22.71	22.71	-
		Equity Issuance Cost		-	-	-
		Return on Capital		425.27	424.66	(0.61)
		Depreciation		381.56	381.04	(0.51)
		Tax		-	-	-
		Operating income		-	-	-
		Other Income (incl 3rd party income)		(35.10)	(12.90)	22.20
		Post financeability adjustments (including tax effects)		116.43	112.65	(3.78)
		Profiling adjustment		-	-	-
		Capital contributions from connection charges and revenue from infrastructure charges		41.81	64.01	22.20
		Water - Final Allowed Revenues		1,904.90	1,932.43	27.53
		Water closing RCV 2012-13 FYA RPI deflated prices		2,417.75	2,411.25	(6.50)
		Water starting allowed revenue (nominal price base)		392.89	398.96	6.07
		Year 1 K		-	-	-
		Year 2 K		1.70%	1.62%	-0.08%
		Year 3 K		1.37%	1.39%	0.02%
		Year 4 K		0.90%	0.80%	-0.10%
		Year 5 K		0.82%	0.80%	-0.02%

All values expressed in £m and 2012-13 FYA RPI deflated prices, apart from Water starting allowed revenue

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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