

**Delivering outcomes for  
customers – Yorkshire  
Water Draft Determination  
Representation**

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## Delivering Outcomes for Customers

### Actions and Interventions arising from the Draft Determination

In reviewing the draft determination for performance commitments and outcome delivery incentives, we have sought to consider the implications of the actions and interventions in relation to our whole business plan.

We continue to believe that our initial plan, set out in September 2018 and resubmitted in April 2019, represents the best package of outcomes for our customer and the environment. However, after careful consideration of Ofwat's feedback we are not proposing changes to the majority of interventions set out in the draft determination relating to performance commitments and outcome delivery incentives.

As a consequence of this approach, our package of outcomes has been substantially altered and the plan no longer reflects the views of our customers nor provides an optimal or economic balance of performance and incentives. We will not repeat here the points we made in this area at Initial Assessment of Plans stage, but since Ofwat has not changed its position accordingly, those points are still valid. We have refrained from making further representations on the interventions in the draft determinations solely in the spirit of achieving a workable compromise for the purposes of the PR19 process.

We have therefore amended our business plan, and associated tables, to:

- Align with the draft determination targets for common comparative performance commitments.
- Adopt the outcome delivery incentive rates as set out in the draft determination
- Accept the move to comparable targets on asset health indicators
- Adopt all enhanced thresholds and associated caps and collars.

By adjusting our plan to implement the draft determination interventions, there is a considerable change in our risk profile. These interventions require a significant step change in performance and increase the level of financial risk associated with failure to deliver. We consider performance delivery is inextricably linked to the assessment of efficient totex, and therefore the position on these interventions needs to be considered in conjunction with our revised totex submission. Our approach should not be construed as an acceptance of these interventions as valid or necessary. Moreover, these interventions cannot be assessed independently of our revised totex submission – which go hand in hand – and so, our position on the interventions is predicated on Ofwat accepting our revised totex submission. If significant revisions to our totex submission occur, or there are other major changes to the overall balance of risk and reward in the final determination, we reserve our rights to challenge those interventions through the appropriate means.

While we have sought to challenge ourselves to find ways to follow Ofwat's policy approach in the spirit of compromise, where the interventions would result in material detriment to customers and the environment, or do not take account of recent legislative and statutory requirements, we are

unable to go with the grain of the draft determination position. These representations are limited to the following areas:

- **Drinking Water Quality** – following the recent overturning of the metaldehyde ban, we have adjusted the CRI deadband.
- **Length of River Improvement** – the Ofwat policy results in a non-meaningful performance commitment and incentive, so we have reinstated our original commitment to include Amber schemes and encourage outperformance.
- **Cost of Bad Debt** – following the draft determination, a number of the input values to the performance commitment calculation needed to be updated.
- **Voids Verification** – we have amended the performance commitment definition and profile to provide a meaningful incentive.
- **Collars** – we have introduced collars on Asset Health performance commitments, in line with the approaches taken on other materially significant incentives.
- **Leakage** – we have amended the target to reflect the totex allowance and the industry ambition on leakage.

We have set out the evidence supporting these positions in the subsequent sections to this chapter.

While we have not proposed changes to the majority of the interventions in the spirit of compromise, we continue to be concerned that there are significant flaws in the methodology followed by Ofwat, and the process and outcome of the performance commitments and the outcome delivery incentive assessments for PR19. We have raised these concerns throughout the consultation and assessment process but we have not found satisfactory evidence in the draft determinations that Ofwat has meaningfully considered or addressed the issues. We will not repeat our previous submissions here, but in summary:

- We are disappointed that there continues to be a lack of coherence in the regulatory framework between the assessment of efficient costs and the targets and incentives for delivery<sup>1</sup>.
- We are concerned that the cumulative impact of the individual interventions has not been adequately considered. As we have outlined in relation to the RoRE analysis above, we consider this provides a disproportionate skew to downside risk<sup>2</sup>.
- We are also disappointed that the outcomes assessment process has not been sufficiently transparent and that the methodology has changed several times without any consultation having been carried out. Interventions have been made at the very late stage of draft determination relating to the definition or structure of performance commitments and outcome delivery incentives. As companies submitted these proposals in May 2018 and Ofwat has had two opportunities to review the proposals, both pre business plan submission in September 2018 and at the IAP stage, it is not acceptable that amendments of this importance are being proposed at this late stage.

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<sup>1</sup> Maximising Customer Benefits from the Outcomes Framework'. Economic Insight, March 2019

<sup>2</sup> 'Financeability of the Notionally Efficient Firm: Top-down analysis'. Economic Insight, August 2019

## ODI RoRE Range

As we set out at the Initial Assessment of Plans, the cumulative impact of Ofwat's interventions present a significant skew to downside risk. We welcome Ofwat's attempt to model the impact of the draft determination interventions in terms of RoRE, however we note that without transparency of how these values were arrived at, it is impossible to recreate the RoRE ranges presented in the draft determination. This lack of transparency undermines the purpose of Ofwat's duty to consult and compromises our ability to adequately respond to the draft determination.

We have continued to adopt the same approach we have consistently taken throughout the price review process to calculating the RoRE ranges: in our September submission, Ofwat's IAP, our IAP resubmission, Ofwat's DD and our DD representation. We therefore can confidently compare the RoRE ranges on the same basis to understand the impact of the changes to the plan throughout the process. This contrasts with the single estimate Ofwat has provided in the draft determination.

- Our business plan submission in September 2018 represented a carefully balanced package of service improvements and incentives across common performance commitments stipulated by Ofwat in the Final Methodology, and bespoke commitments that are meaningful and important to our customers. As a result, we presented a package which demonstrated a RoRE range of -2.1% to +1.9%. The range was consistent with the guidance of +/-3% and was broadly symmetrical. We had strong customer support at the individual performance commitment and outcome delivery incentive level, and for the overall balance of risk and reward in the plan.
- The cumulative effect of the actions suggested by Ofwat at the Initial Assessment of Business Plans in January 2019 resulted in a significant change to the balance of risk and reward on performance commitments and outcome delivery incentives. The RoRE range resulting from Ofwat's actions at IAP is estimated at -4.9% to -1.8%, creating a very pronounced downside skew. Given the 90+ individual IAP actions, the material impact on the RoRE range was inevitable.
- Consequently, we resubmitted a business plan in April 2019 with only minor changes to the September submission, in order to preserve our customers preferences and ensure that the balance of risk and return remained sensible. As a result, the RoRE range was estimated as -2.4% to +1%.
- In understanding the draft determination interventions, we have re-estimated the associated ODI RoRE range for Ofwat's draft determination as +0.18% to -2.89%. This contrasts with the estimates provided by Ofwat as -2.21 to +1.09% in the draft determination. No detailed calculations have been provided to support Ofwat's position. It appears that a minor adjustment to our April 2019 business plan resubmission RoRE ranges has been made to account for the draft determination interventions. Given the scale of the interventions (over 70 individual interventions) it is difficult to understand how this equates to such a small adjustment in the ODI RoRE range.

- As set out in our supporting evidence: ‘Financeability of the notionally efficient firm’<sup>3</sup>, it appears that Ofwat has simply transposed the performance risk range we calculated in relation to the performance commitment targets we set (calibrated to the totex plan) in the September 2018 and April 2019 business plan submissions, to the new targets set by Ofwat at draft determinations. It is plainly erroneous to use this approach, particularly when Ofwat’s adjustments to the targets at draft determination are so extreme. Given the materiality of the changes, and the associated financial and reputational implications of performance commitments, it is surprising that Ofwat has not undertaken a proper performance risk analysis.
- Following adjustments to the draft determination interventions for a limited number of performance commitments and outcome delivery incentives where we have provided representations, we have re-estimated the RoRE impact as +0.28% to -2.65%.

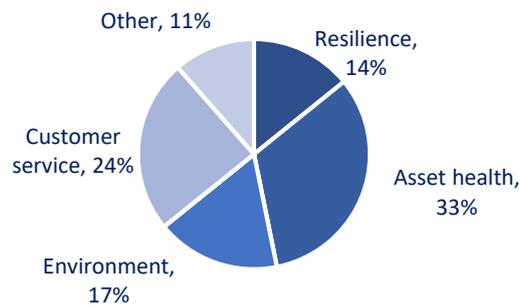
#### Draft Determination Representation ODI RoRE:

ODI high RoRE case scenario (£m)	2020/21	2021/22	2022/23	2023/24	2024/25	Annual average	RoRE impact (%)
Water network plus	£5.71	£5.19	£4.35	£4.26	£5.06	£4.92	0.17%
Water resources	£0.29	£0.54	£0.69	£0.92	£1.42	£0.78	0.03%
Wastewater network	£0.38	£0.46	£0.48	£0.58	£3.09	£1.00	0.04%
Bioresources outcome	£0.03	£0.06	£0.07	£0.09	£0.09	£0.07	0.00%
Residential retail	£1.20	£1.12	£0.96	£0.97	£1.21	£1.09	0.04%
<b>Total - impact all ODIs</b>	<b>£7.61</b>	<b>£7.37</b>	<b>£6.56</b>	<b>£6.83</b>	<b>£10.87</b>	<b>£7.85</b>	<b>0.28%</b>

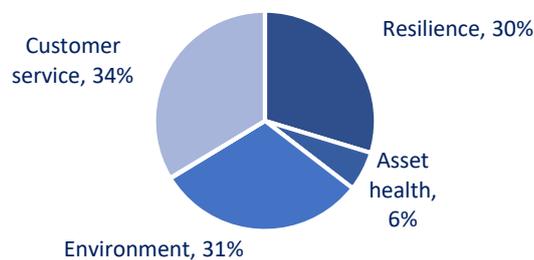
ODI low RoRE case scenario (£m)	2020/21	2021/22	2022/23	2023/24	2024/25	Annual average	RoRE impact (%)
Water network plus	-£31.51	-£31.26	-£31.57	-£31.67	-£31.61	-£31.52	-1.11%
Water resources	-£0.96	-£1.89	-£2.81	-£3.73	-£4.82	-£2.84	-0.10%
Wastewater network	-£25.47	-£24.32	-£23.20	-£22.18	-£28.92	-£24.82	-0.87%
Bioresources outcome	-£9.23	-£9.04	-£9.00	-£9.02	-£9.02	-£9.06	-0.32%
Residential retail	-£7.07	-£7.01	-£7.05	-£7.10	-£7.13	-£7.07	-0.25%
<b>Total - impact all ODIs</b>	<b>-£74.24</b>	<b>-£73.51</b>	<b>-£73.63</b>	<b>-£73.70</b>	<b>-£81.49</b>	<b>-£75.32</b>	<b>-2.65%</b>

<sup>3</sup> ‘Financeability of the Notionally Efficient Firm: Top-down analysis’. Economic Insight, August 2019. Page 46.

## P10 by ODI Type



## P90 by ODI Type



The ODI RoRE resulting from our position in these representations clearly demonstrates a significant skew to the downside, with extremely limited upside. Given the scale of the performance commitment and outcome delivery incentive interventions, a shift in the RoRE range of this magnitude is expected.

The ODI RoRE range associated with our representation includes the application of collars on our Asset Health measures. These collars have been applied at the level of 1% of RoRE for the relevant price controls in the year. These collars are necessary given the significant step change expected in performance to achieve the draft determination targets. As our p.10 and p.90 calculations apply a % distribution around the target to derive the financial exposure, it inherently assumes that the target level is a p.50. Obviously, with the significant changes in performance target we have committed to achieve on asset health, the new target is unlikely to equal a p.50 level and the associated p.10 levels are not reflective. It is particularly the case for mains repairs, where the new draft determination target is better than the p.90 level we predicted at the September business plan submission.

Elsewhere in these representations we have outlined our concerns with the overall interaction of incentives across the price review and have provided detailed and clear that the systematic selection of extreme targets (on both costs and outcomes) leads to an unachievable (and therefore unfinanceable) notionally efficient company<sup>4</sup>.

The following chapters set out the individual responses for performance commitments and outcome delivery incentives where we provide detailed representations.

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<sup>4</sup> Financeability of the Notionally Efficient Firm: Top-down analysis'. Economic Insight, August 2019

## Individual PC and ODI Representations:

### 1. Drinking Water Quality

Action reference
<b>YKY.OC.A7</b>
<b>Intervention Assessment and Rationale:</b> <ul style="list-style-type: none"><li>To comply fully with drinking water standards is not a new requirement. The measure can fluctuate, but existing performance data does not suggest volatility. Some variance may be due to the pesticide failures, which is expected to be reduced once the ban on the use of metaldehyde in place in the start of the 2020.</li><li>We do however recognise that there may be a need to retain some flexibility for new metaldehyde legislation to be implemented therefore we have increased the deadband for the first two years of PR19 compared to our IAP proposals.</li><li>A deadband set at the levels we are proposing allows for some fluctuation in performance, whilst providing a strong incentive to minimise compliance failures.</li></ul>
<b>Intervention:</b> <ul style="list-style-type: none"><li>We are intervening to set a standard deadband. The deadband profile for the Compliance Risk Index is: 2020-21 – 2.0 2021-22 – 2.0 2022-23 – 1.5 2023-24 – 1.5 2024-25 – 1.5 Unit = Compliance Risk Index Score</li></ul>

#### 1.1 Executive summary

We have retained our original September business plan deadband for the Drinking Water Quality performance commitment, to account for the overturning of the December 2018 Defra ruling to withdraw all products containing Metaldehyde in July 2019. This means that we will need to mitigate the effects of the use of that pesticide as originally planned.

#### 1.2 Adjustment to Performance Commitment deadband

As part of our Business Plan submission in September 2018, we set out our long-term aspirations to achieve full water quality compliance proposing a zero CRI target for the 2020-25. For this period, we also set out a penalty deadband position. To account for the variability in performance, the deadband range of 3.38 to 2.47 over the 5-year period with underperformance payments only applying beyond the deadband range.

To achieve our performance target, we set out management of the pesticide Metaldehyde as one of our key strategies, to be implemented through the following initiatives (among others):

- Provision of resource through Natural England to provide catchment sensitive farming officers to engage with farmers on alternative pesticide use.

- Influencing farming practice to encourage more environmentally sustainable approaches to reduce the harmful impact of pesticides.
- Promoting metaldehyde free approaches amongst the supply chain for arable products.
- Developing a system for the loan of equipment to small farms to allow them to benefit from new farming technology.

The ‘catchment first’ approach allowed us to significantly minimise costs associated with the treatment required for Metaldehyde, while also delivering wider benefits within the catchment. While this approach does not achieve drinking water quality improvements in the fastest way, as it relies on green and blue infrastructure rather than traditional concrete treatment schemes, it does so in the most cost-beneficial way whilst still achieving full removal of metaldehyde failures by 2024-25.

To put it another way – our performance profile was based on plans that minimise cost while delivering the most benefit, which means the performance target is more gradual than it could be if standard traditional treatment schemes were implemented. Our performance commitment levels therefore represented the most economic outcome for customers, as they receive ‘more for less’. It was the most optimal balance of costs, performance profile, and benefits possible for customers.

Following our business plan submission in September 2018, the use of Metaldehyde was banned by Defra. The ban prohibited the use of the slug pellets from the spring of 2020 with sales being stopped from summer 2019. As a result, Ofwat implemented a penalty deadband on water quality across the period at IAP to reflect the expectation that metaldehyde would no longer be present in the environment.

In recognition of the introduction of the ban, we removed the enhancement expenditure for the catchment approach to metaldehyde removal from our April business plan resubmission. However, we retained our performance profile in the April resubmission, as it was clear that the reduction in metaldehyde in the environment would not happen instantaneously.

In July 2019 the High Court approved an order to formally overturn the December 2018 Defra ruling to withdraw all products containing Metaldehyde, with immediate effect. Had the ban remained in place we would have expected diminishing levels of Metaldehyde as farmers reduced their stock in anticipation of the ban. However, due to the lifting of the ban we are now anticipating similar usage levels of the pesticide to remain as were expected in the September business plan submission.

As the status of Metaldehyde is now the same as that of pre-December 2018, we are resubmitting our original deadband position for Compliance Risk Index (CRI), in line with the original September 2018 business plan. We have also re-included the necessary enhancement expenditure in the totex representation.

	2020-21	2021-22	2022-23	2023-24	2024-25
CRI Deadband	3.379	3.258	3.137	2.89	2.471

As we highlighted in the IAP resubmission, the measure CRI used by Ofwat to define the deadband is a relatively immature measure and can be disproportionately impacted by events outside of companies control. The introduction and subsequent overturning of the metaldehyde ban suggests

that there will be unpredictable changes in the use of metaldehyde over the course of 2018-19 and 2019-2020 (such as stocks being 'run down' and larger quantities entering the system ahead of summer 2019), and so it is problematic to identify a baseline year to measure these effects against.

Given this context, it is difficult to see how a comparative target can be derived on an evidential basis, or how the limited shadow reporting data can confidently be used to assess the measure volatility or forecast future performance.

We would urge Ofwat to consider placing more weight on companies own cost beneficial plans to deliver drinking water quality compliance and the Drinking Water Inspectorates approval of those plans in setting the deadband for the performance commitment.

## 2. Length of River Improved

### Action reference

#### YKY.OC.C2 PR19YKY\_4

##### Intervention Assessment and Rationale:

- The company's proposed performance commitment levels do not take into account the risk of Amber schemes being removed from the water industry national environment programme. Given the uncertainty around the requirement to deliver schemes classified as "Amber", we have updated the performance commitment definition to only include schemes classified as "Green" by the Environment Agency as of the 1st April 2019. This avoids unnecessary complexity in the performance commitments and outcome delivery incentives framework, which could require several revisions through the 2020-25 period to align with changes in the water industry national programme.
- There is no reason that performance cannot be measured each year and greater benefits will be realised if delivered more quickly. We have based the targets on the water industry national environment programme issued by the Environment Agency to water companies on the 29/03/2019. The company could update these figures if it has evidence that a different profile is more appropriate, but still stretching.
- Yearly levels of kilometres of river improved for the performance commitment are determined based on the number of Green schemes to be completed each year.
- There is no longer scope for outperformance of this performance commitment and we have removed the outperformance payments. Any changes required to costs to deliver schemes that were uncertain and designated amber on 1 April 2019 will be implemented by the cost adjustment mechanism.
- The company proposes adjusting the outcome delivery incentive rate following an error in the IAP submission. The units were previously incorrectly stated as kilometres improved rather than percentage of kilometres improved.
- The proposed outcome delivery incentive rate is calculated through a triangulation that includes willingness to pay data. Following the intervention on the performance commitment level, which now excludes amber schemes, we have set the outcome delivery incentive as in-period and recalculated the outcome delivery incentive rate based on the total water industry national environment programme cost allowance for the green schemes. We have calculated an underperformance payment to reflect the foregone benefits from the improvements being delayed based on the approach set out in 'PR19 draft determinations: Delivering outcomes for customers policy appendix'.

##### Intervention:

- We are intervening to set the definition to include only schemes specified as "Green" by the Environment Agency as of the 1st April 2019.
- We are intervening to set service levels for earlier years and remove the outperformance outcome delivery incentive rate. We have calculated the in-year targets by prorating the total km improved in WINEP to the number of schemes per year. The resulting service levels are: 2020-21 – 17.29, 2021-22 – 55.96, 2022-23 – 73.26, 2023-24 – 92.65, 2024-25 – 113.28
- We are intervening to set an underperformance payment rate of £0.0827 million.
- We have allowed £132 million for the company's water industry national environment programme green schemes. We calculate the rate by multiplying the programme total expenditure by the weighted average cost of capital plus the run-off rate, and then dividing this by the relevant units.

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## 2.1 Executive summary

We are representing on the removal of Amber schemes from the target, the use of annual targets, the removal of the outperformance payment and the adjustment of the incentive rate to a cost-based incentive.

We have restated our September and April business plan performance commitment.

## 2.2 Implications of Ofwat Policy Approach

We can understand Ofwat's intention to simplify the WINEP related performance commitments and remove amber schemes from the commitment to avoid uncertainty in the targets.

However, it is not acceptable that the interventions have only been applied at such a late stage in the price review process. We provided definitions for performance commitments to Ofwat in May 2018 to enable early sight of our proposals and to ensure that performance commitments were developed in line with the PR19 methodology. Ofwat had the opportunity to review the definitions and provide feedback ahead of our September business plan submission. Ofwat also had a further opportunity to implement actions at the IAP assessment in January. At neither of these points did we receive feedback on the performance commitment, or any indication that it did not follow the PR19 methodology. It is therefore surprising that such extensive interventions have been made to the performance commitment at draft determination, which both weaken the protection for customers and reduce the incentive to provide environmental enhancements to the region.

In reviewing the draft determination interventions, it is clear that, if we applied the intervention actions from Ofwat, the resulting performance commitment would not be in the best interests of customers or the environment. We have outlined the implications below, but fundamentally it would result in a much smaller level of environmental benefit being captured and incentivised in the performance commitment. Such an outcome would be unfortunate, particularly as this bespoke commitment is already in place in the current period and is delivering demonstrable benefits to customers and the environment.

The primary interventions at Draft Determination and our concerns with the approach are outlined below.

### *2.2.1 Removal of the amber schemes*

We have been unable to recreate the proposed performance profile set out in the draft determination. Following a query to Ofwat (YKY-DD-010), we understand that the proposal was not based on the agreed delivery profile of schemes with the Environment Agency. We have therefore sought to understand what the performance commitment target would be if the draft determination policy is accurately applied.

Based on WINEP<sup>5</sup>, we have 125 schemes related to river water improvement. Of that, 110 are currently designated 'Amber'. Therefore, under Ofwat's policy approach, 88% of schemes would be removed from the performance commitment.

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<sup>5</sup> Published 31/03/2019

Removing the Amber schemes results in 0 km being included in the performance commitment for schemes relating to river improvements for clean water (i.e. a demonstratable benefit in river ecology, hydrology or geomorphology). This is in contrast to the current period, in which we are delivering 100km of clean water river improvements. The current period performance commitment covers all of the NEP environmental obligations designated for the current period.

The remaining schemes eligible for the performance commitment – i.e. those classified as Green, relate to wastewater water river improvements and total 45.48km of improvement from 4 schemes.

Given that our September and April business plan submissions detailed 767.63km improvement by the end of 2025, a target of 45.48km covering just 4 WINEP schemes significantly understates the benefits to customer and the environment we will be delivering. It also clearly does not provide appropriate protection for customers should the delivery of the full programme not be achieved.

We understand that Ofwat has concerns around including amber schemes in the performance commitment due to the uncertainty that the schemes have not been fully approved yet. However, it is also clear that setting the WINEP3 (31/03/2019) as the ‘cut-off’ results in an undesirable outcome. Although a large number of our WINEP schemes were flagged as amber in WINEP3, there is a very high degree of certainty that these schemes (and associated km outputs) will be designated as green in the near future. We have engaged extensively with the Environment Agency on the scale and scope of the programme and are confident that the WINEP3 represents a position extremely close to our likely designation. For example, as of 13/05/2019, all of the schemes listed as amber for UWWTD (phosphorous) in the WINEP3 have been confirmed by Defra<sup>6</sup>. These schemes have changed from amber to green, with no amendments in terms of outputs. We have appended the confirmation letter received from the Environment Agency (copied to Ofwat) in Appendix 2 of this document.

### 2.2.2 Annual performance commitment

Following Ofwat’s approach to the performance commitment, the schemes confirmed as green at 31/03/2019 schemes all have a compliance delivery date of 2021. Under the Ofwat policy approach, the performance commitment profile would only be relevant for year 1, as set out below:

	2020-21	2021-22	2022-23	2023-24	2024-25
Ofwat Policy: LORI (km)	45.48	0	0	0	0

Again, this outcome does not appear helpful for customers or the environment, as it would result in an extremely limited performance commitment.

### 2.2.3 Removal of Outperformance payment

In removing the outperformance payment at Draft Determination, following the limiting of the performance commitment target to only include green WINEP schemes, Ofwat state:

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<sup>6</sup> Urban Waste Water Regulations: Delivery of schemes to meet the requirements for new Sensitive Area Designations, Environment Agency. Letter dated 05/06/2019

*“There is no longer scope for outperformance of this performance commitment, and we have removed the outperformance payments”<sup>7</sup>*

No further justification is provided for the removal of the outperformance payment.

We do not consider Ofwat’s approach to removing the outperformance payment for length of river improved at draft determination represents either our customers’ views, or the best approach for encouraging environmental improvements. Indeed, we note that the importance of the environment is a fundamental principle underpinning Ofwat’s Forward Programme. It is disappointing that the outperformance payment has been removed, and that our customer valuation incentive rate has been replaced with a simplistic unit cost proxy.

In preparing for our September business plan submission, we conducted the largest ever customer research programme in our region to date. Our customers had clear views about this performance commitment and the type of incentive that should be attached:

- Customers were extremely supportive of the use of under and outperformance payments.
- River water quality featured among the top ten most frequently-selected commitments that customers think should have the highest rewards and penalties.
- Customers ranked this performance commitment as one of the top 10 service areas that we should focus investment on, with only direct customer service issue such as drinking water quality, internal sewer flooding and supply interruptions ranked higher.

The customer views on the application of outperformance payments for improving the river environment are unequivocal. It is not acceptable that Ofwat has decided to ignore this clear evidence in the application of the policy approach for WINEP performance commitments.

We also note that Ofwat states in the Policy Appendix:

*“Where companies proposed outperformance only payments for going beyond WINEP and NEP requirements, we challenged them for evidence of customer and stakeholder support for the outperformance payments, and also required further justification for the benefit to customers from implementing the additional schemes.”<sup>8</sup>*

As we did not receive an action at the IAP stage relating to the removal of the outperformance payment on length of river improved, we have previously not had the opportunity to demonstrate further justification for the benefit to customers of implementing additional schemes (as would have been required by Ofwat’s duty to consult). We have extremely strong customer support for the outperformance payment, as collated for the September business plan submission, and even if we had the additional time afforded to other companies by the earlier signalling of the policy approach at IAP, it is clear that any additional customer research would only confirm the weight of evidence provided in the September plan.

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<sup>7</sup> PR19 draft determinations: Yorkshire Water - Delivering outcomes for customers actions and interventions, page 26

<sup>8</sup> PR19 draft determinations: Delivering outcomes for customers policy appendix. Page 97

We are currently developing plans to deliver schemes beyond the statutory WINEP requirements, all of which will provide environmental benefit for our customers and the region as a whole. We are assessing opportunities to provide fish passage and river restoration schemes in the following catchments and rivers:

- River Aire
- Lower and Mid Calder
- Upper Calder and Colne
- River Rother
- River Dearne
- Don Catchment

These schemes will deliver significant multiple benefits under our 6 capitals approach, such as Natural Capital (fisheries, water quality, benefits), Social Capital (recreation, amenity and non-use, quality of place benefits) Human Capital (local economy, employment) and Intellectual Capital benefits.

We are exploring these schemes with partnership organisations, including third sector organisations, and in conjunction with our 'integrated catchment management' performance commitment to ensure that we can deliver the widest benefit possible to the region. Some of these schemes, such as 'DNAire', are well advanced having secured funding from both YWS and Heritage Lottery Fund. Our Customer Forum are fully supportive of the approach and endorse the use of outperformance payments with the performance commitment in accordance with our customers views.

Removal of the outperformance payment on length of river improved will inevitably result in the majority of these schemes not being delivered as they are neither included in the cost assessment allowances, or the outcome delivery incentives, resulting in the foregoing of benefits for customers and the environment.

#### *2.2.4 Incentive Rate*

In addition to removing the outperformance payment rate, Ofwat have also intervened to set a cost-based incentive to estimate the 'value foregone' for late delivery of a scheme. The penalty incentive rate has been set at of £82,700 per km.

We do not consider this is an appropriate approach to either compensating for late delivery, or for incentivising additional performance through an outperformance incentive. It neither takes account of our own costs of delivery or the value that our customers place on the benefits of river improvement. It also unclear if the use of an industry average unit cost based solely on (currently limited) green schemes, would be in any way representative of the full WINEP programme.

We have adopted a sophisticated approach to understanding the value of river improvements, and we are extremely disappointed that this has not been appropriately taken account of in the determination. As well as the customer research on the type of outperformance and underperformance payment, we also undertook an extensive integrated programme of customer valuations to support the development of the outcome delivery incentives and our cost-benefit

optimisation approach. It is not appropriate for Ofwat to substitute clear customer feedback with its own assessment, without very compelling evidence that the latter would be preferable. This approach is in direct conflict with Ofwat's duty to protect consumers.

We carried out six separate economic valuation studies throughout the programme, one of which focussed on river improvements and was developed and delivered in collaboration with Exeter University to specifically advance the academic and applied approaches to valuation on this topic.

The research combined revealed preferences and stated preference techniques to develop use and non-use values for river improvements. Use values relate to the benefit that individuals have from the direct experience of the river, whereas the non-use values refer to the existence value of the river.

The analytical techniques used to simultaneously analyse stated preference and revealed preference data are a recent development in statistics, and the application of these in our research alongside the distinction of use and non-use valuations are state of the art in the field of economic valuations. It provides an extremely robust, triangulated valuation for the environmental service and goes well beyond the standard approach to 'willingness to pay surveys'.

The model developed allows us to not only understand the overall value that customers place on rivers at the generic Yorkshire region level, but to also make nuanced valuation predictions for changes in river water quality at different river reaches. This means that we can identify the changes to the *overall* value provided if we improve river quality in a *specific* area. It is a ground-breaking approach to accounting for how changes in one stretch of river affect customers' values for every river in Yorkshire, and significantly improves the sophistication of cost-benefit investment optimisation.

The river improvement valuation research was peer reviewed by Professor Mike Christie at Aberystwyth University:

**“The approach used is state of the art in terms of combining revealed and stated preference methods, and incorporating spatial analysis into the analysis - very impressive”**

*- Professor Mike Christie (Aberystwyth University)*

We applied the overall Yorkshire region valuation for moving from once classification of improvement to another in the incentive calculation for performance commitment. Using the value of £111,643 per km, the underperformance and outperformance incentives rates were calculated to provide a symmetrical incentive of £55,821 per km (assuming marginal costs equalled marginal benefits). We will use the detailed individual river valuations in developing our cost-benefit analysis for providing river improvements beyond the WINEP programme to ensure that we are targeting the most economic and valuable investments.

We are disappointed that our strong customer valuation evidence has been ignored at the draft Determination and has been overwritten by Ofwat's approach to using a simple and crude unit cost approach. It is unfortunate that the policy application by Ofwat in this area genuinely limits the opportunity for innovation, environmental enhancement and technical advancement, and we strongly urge that this approach is reconsidered.

### 2.3 Length of River Improved Performance Commitment and Incentive

Given the limitations of the Ofwat policy approach outlined above, we remain convinced that the best approach for our customers and for the environment is to restate our performance commitment as it was presented in the September and April business plan submissions.

As we outlined in the May 2018 Definition document, we had carefully considered the implications of setting a target which may be uncertain due to the misalignment between environmental and economic regulatory timetables. We therefore included a caveat to update the performance commitment target in 2022, through the standard Ofwat Change Protocol, once the WINEP length of river (km) outputs have been confirmed. As the target was set for the end of 2025, in line with the majority of the compliance dates for individual schemes, it allowed suitable flexibility to accommodate the issues associated with WINEP uncertainty, while retaining a meaningful performance commitment with under and outperformance payments in line with our strong customer preference.

While we still consider that an end of AMP target confirmed mid-period is the most appropriate approach, we are willing to amend this element of the performance commitment to accommodate Ofwat's policy requirement to set out the target ex ante.

Although a large number of our WINEP schemes are currently amber, we have had extensive engagement and involvement with the Environment Agency throughout the development of the programme. As a result, we are confident that the amber schemes will be designated as green in the near future with minimal changes. This process is already occurring, with the designation of UWWTD schemes on 13/05/2019, with all the amber schemes being confirmed as green by DEFRA<sup>9</sup>.

We are therefore willing to set out the performance commitment target, including the Amber schemes, ex ante. The risk of any reduction in the required WINEP km will be borne by us – if there is any deficit in the WINEP target, then we will seek to implement non WINEP schemes to meet the target.

As our restated performance commitment includes outperformance payments, we propose that only km improved associated with non-WINEP schemes will count towards outperformance payments. We will exclude the Amber and Green WINEP schemes in order to protect customers.

We are also restating the performance commitment and outcome delivery incentive to be measured and applied in year 5 of the period. As outlined above, only a small number of schemes have compliance dates earlier than 2024-25, and these timescales are agreed with the environmental regulator on the basis of detailed technical understanding of what is feasible, desirable and achievable.

It is clearly not appropriate for companies to be penalised for “late delivery” against a performance commitment target which does not reflect the environmental obligation requirement agreed with the environmental regulator. Equally, we are hesitant to suggest that outperformance should be

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<sup>9</sup> Urban Waste Water Regulations: Delivery of schemes to meet the requirements for new Sensitive Area Designations, Environment Agency. Letter dated 05/06/2019. Appendix 2.

claimed for early delivery against environmental obligations when this may not be the most cost-beneficial profile of performance (and may cost customers more than it should).

We are of the strong view that the performance commitment we have proposed represents the best outcome for our customers and the environment, as;

- The target accurately reflects what we will actually deliver for our customers and the environment. It takes account of the full range of improvements laid out in the WINEP3, rather than arbitrarily limiting performance to a small and unrepresentative sub amount. Any risk of uncertainty from the amber schemes changing will be completely borne by us, rather than the customer.
- The outperformance incentive encourages greater benefits to our customers and the regional river environment and builds on ours (and the wider industry) experience of delivering in partnership to achieve multi-beneficial outcomes.
- The incentive rate reflects the value of improvements to the highest analytical standard currently available and is a substantially more sophisticated approach than an industry unit cost.
- The end of period target provides the most cost beneficial approach to allowing delivery to be phased in line with environmental requirements and maximising the appropriate sequencing of schemes.

We recognise that the issues raised in this performance commitment are not straightforward, and so we would welcome the opportunity to discuss it in more detail with Ofwat in order to achieve a meaningful outcome for customers.

In restating our performance commitment, we have included the full list of schemes contributing to the km improved in the appendix to this document.

The performance commitment is therefore restated as:

	2020-21	2021-22	2022-23	2023-24	2024-25
Length of River Improved					767.63

### 3. Cost of Bad Debt

Action reference
<b>YKY.OC.C4 PR19YKY_13</b>
<b>Intervention Assessment and Rationale:</b>
<ul style="list-style-type: none"><li>• The company proposes to update the performance commitment levels for this performance commitment. The percentage of the bill per customer resulting from bad debt has changed from 2.79% (2024-25) in the September 2018 submission to 3.18% (2024-25) in the April 2019 submission. The company states the changes are due to an increase in debt management costs of £0.225 million per annum resulting from the additional £1 million per year invested in 'WaterSupport' (see PR19YKY_12). The company also states that the doubtful debt charge has increased by £2.4 million per annum to account for the write-offs associated with the Resolve scheme.</li><li>• The company provides insufficient evidence for the proposed increase in the percentage of customer bills resulting from bad debt. In particular, the company provides limited evidence to support the additional £3 million in write-offs. The company assumes that the customer arrears on the 'Resolve' scheme will be greater than when they were paying charges directly through the Department for Work and Pensions, but has provided no evidence to support this. The Resolve scheme should continue to result in an element of bills being paid and it is not clear what change in write-offs will result.</li></ul>
<b>Intervention:</b>
<ul style="list-style-type: none"><li>• We are intervening to re-instate the September 2018 submission performance commitment levels for this performance commitment.</li></ul>

#### 3.1 Executive summary

We are representing on the performance commitment target for cost of bad debt as input values to the calculation need to be updated to reflect the draft determination position.

We are providing further evidence on the adjustment for bad debt write-offs.

#### 3.2 Performance Commitment Target

The performance commitment target needs to be updated following the draft determination.

The following variables are used to calculate the cost of debt for the performance commitment:

- the average bill value
- the Weighted Average Cost of Capital
- the cost of debt management
- the revenue outstanding
- and the revenue written-off.

The application of the input values in the cost of bad debt calculation are set out in the table below:

Calculation:		
Item	Description / Formula	Unit
A: Revenue Outstanding	Total household revenue debt outstanding as at 31 March	£
B: WACC	Weighted Average Cost of Capital	%
C: No of households billed	Number of households billed per the Annual Performance Report	Number
D: Cost of interest on revenue not collected	(A x B) / C	£
E: Revenue Written Off	Revenue Written Off, divided by no. of households billed	£
F: Revenue Written off per household billed	E / C	£/household
G: Debt Management Costs	Debt Management Costs, divided by no. of households billed	£
H: Debt Management Costs per household billed	G / C	£/household
I: Bad Debt Cost per household	D + F + H	£/household
J : Average household bill	Average household bill as reported	£
K: Bad Debt Performance Commitment	I / J	%

The following table outlines the calculation for the cost of bad debt performance commitment level supporting our September 2018 submission:

**Table 1: Bad Debt Performance Commitment calculation for submission September 2018**

	2020/21	2021/22	2022/23	2023/24	2024/25
Household Average Bill (J)	£409.86	£423.36	£432.35	£445.14	£453.46
	£(m)	£(m)	£(m)	£(m)	£(m)
Arrears (A)	130.101	138.243	146.897	159.095	166.061
Write Offs (E)	17.386	18.125	18.584	19.113	19.657
DMC (G)	4.260	4.260	4.260	4.260	4.260
Households Billed (no's) (C)	2,218,790	2,239,714	2,260,740	2,281,730	2,302,763
<b>Cost of Debt per Property</b>					
Revenue Outstanding (D)	£1.69	£1.78	£1.87	£2.01	£2.08
Revenue Written Off (F)	£7.84	£8.09	£8.22	£8.38	£8.54
Debt Management Costs (H)	£1.92	£1.90	£1.88	£1.87	£1.85
Cost of debt per property (I)	£11.44	£11.77	£11.98	£12.25	£12.46
Cost of Debt as a % of annual bill (K)	<b>2.79%</b>	<b>2.78%</b>	<b>2.77%</b>	<b>2.75%</b>	<b>2.75%</b>

As we outlined in the IAP April resubmission, we needed to update the write off costs, which have changed because of the inclusion of an extra £3m p.a for the Resolve scheme.

To be clear, we are writing off debts for customers in the Resolve programme (i.e. the customers currently paying through the Department of Work and Pensions scheme) because the customers are tied into paying their full bills and therefore cannot access other support schemes. We accept the observation from Ofwat that some element of bills would continue be paid off through the Resolve scheme if we did not write these debts off, however these customers are recognised as being in need of financial support and are currently not receiving the same level of support available to other customers in similar circumstances.

There is no financial benefit to Yorkshire Water writing the debts off – it is purely to relieve those in financial hardship who currently have no access to support schemes. Widening the scope of Resolve allows us to write off those debts for people who previously have not benefited. As a result, the write off value therefore goes up in the cost of bad debt calculation.

We also updated the cost of bad debt PC for other input values, including the average bill level. The following table shows the calculation supporting our IAP Resubmission for the cost of bad debt PC target, with changes in the input values highlighted in green:

**Table 2: Bad Debt Performance Commitment calculation for submission February 2019 (change in household average bill, arrears, write offs and DMC)**

	2020/21	2021/22	2022/23	2023/24	2024/25
Household Average Bill (J)	£402.85	£407.61	£418.37	£431.09	£442.79
	£(m)	£(m)	£(m)	£(m)	£(m)
Arrears (A)	127.101	132.057	137.329	145.935	152.087
Write Offs (E)	20.386	21.125	21.584	22.113	22.657
DMC (G)	4.092	4.092	4.092	4.092	4.092
Households Billed (no's) (C)	2,218,790	2,239,714	2,260,740	2,281,730	2,302,763
<b>Cost of Debt per Property</b>					
Revenue Outstanding (D)	£1.65	£1.70	£1.75	£1.84	£1.90
Revenue Written Off (F)	£9.19	£9.43	£9.55	£9.69	£9.84
Debt Management Costs (H)	£1.84	£1.83	£1.81	£1.79	£1.78
Cost of debt per property (I)	£12.68	£12.96	£13.11	£13.33	£13.52
Cost of Debt as a % of annual bill (K)	3.15%	3.18%	3.13%	3.09%	3.05%

Following the draft determination, both the average bill value and the WACC components (affecting the revenue outstanding) need to be updated in the calculation:

**Table 4: Draft Determination recalculation July 19 (change in debt management costs, arrears, household average bil, WACC including DWP Resolve write offs)**

	2020/21	2021/22	2022/23	2023/24	2024/25
Household Average Bill (J)	£361.60	£368.78	£376.15	£383.67	£391.35
	£(m)	£(m)	£(m)	£(m)	£(m)
Arrears (A)	127.101	132.057	137.329	145.935	152.087
Write Offs (E)	20.386	21.125	21.584	22.113	22.657
DMC (G)	4.092	4.092	4.092	4.092	4.092
Households Billed (no's) (C)	2,218,790	2,239,714	2,260,740	2,281,730	2,302,763
<b>Cost of Debt per Property</b>					
Revenue Outstanding (D)	£1.51	£1.56	£1.60	£1.69	£1.74
Revenue Written Off (F)	£9.19	£9.43	£9.55	£9.69	£9.84
Debt Management Costs (H)	£1.84	£1.83	£1.81	£1.79	£1.78
Cost of debt per property (I)	£12.54	£12.82	£12.96	£13.17	£13.36
Cost of Debt as a % of annual bill (K)	3.47%	3.48%	3.45%	3.43%	3.41%

It is possible to calculate the performance commitment target at draft determination without the impact of the Resolve write-offs, although we do not consider this would be the right approach. Ignoring the Resolve write offs does nothing to improve the “stretch” of our performance commitment, it would be an arbitrary adjustment to one of the inputs to the performance commitment calculation – an adjustment that would fail to recognise the impact of an increase of £3m support.

The following table shows the impact of the bill level and WACC changes on the performance commitment target if the erroneous adjustment to write-off is continued.

**Table 3: Draft Determination recalculation July 19 (change in debt management costs, household average bill, arrears, WACC and excluding DWP Resolve write offs)**

	2020/21	2021/22	2022/23	2023/24	2024/25
Household Average Bill (J)	£361.60	£368.78	£376.15	£383.67	£391.35
	£(m)	£(m)	£(m)	£(m)	£(m)
Arrears (A)	130.101	135.057	140.329	148.935	155.087
Write Offs (E)	17.386	18.125	18.584	19.113	19.657
DMC (G)	4.092	4.092	4.092	4.092	4.092
Households Billed (no's) (C)	2,218,790	2,239,714	2,260,740	2,281,730	2,302,763
<b>Cost of Debt per Property</b>					
Revenue Outstanding (D)	£1.55	£1.59	£1.64	£1.72	£1.78
Revenue Written Off (F)	£7.84	£8.09	£8.22	£8.38	£8.54
Debt Management Costs (H)	£1.84	£1.83	£1.81	£1.79	£1.78
Cost of debt per property (I)	£11.23	£11.51	£11.67	£11.89	£12.09
Cost of Debt as a % of annual bill (K)	<b>3.11%</b>	<b>3.12%</b>	<b>3.10%</b>	<b>3.10%</b>	<b>3.09%</b>

We are therefore providing updated performance commitment targets to reflect the draft determination updates and reflecting the Resolve write offs:

	2020-21	2021-22	2022-23	2023-24	2024-25
Cost of Bad Debt	3.47%	3.48%	3.45%	3.43%	3.41%

These values will need adjusting again should bill values and WACC change in the final determination.

## 4. Voids Verification

### Action reference

**YKY.OC.A50, YKY.OC.C5, PR19YKY\_18, YKY.OC.C6, PR19YKY\_18**

#### Intervention Assessment and Rationale:

- This aspect of the performance commitment was not actioned at IAP but has been reviewed in depth and in context with the rest of the industry following the addition of outperformance payments.

The company forecasts a household void rate of 4.7% in 2019-20 according to data it submitted in its business plan. We have compared this to data obtained from the Ministry of Housing, Communities and Local Government on empty dwellings that we assess are within the area served by the company – this suggests a rate of empty properties of approximately 3.1% in 2017-18. In addition to this, the company forecasts reductions through the period of approximately 5% which is much lower than the industry average reduction and results in an effective target of 4.5% in 2024-25. As a consequence, we do not consider the company's proposed performance commitment levels to be sufficiently stretching.

We recognise there may be valid reasons that the number of properties that correctly do not receive a bill from the company is different to the rate of empty dwellings in the Ministry of Housing, Communities and Local Government data, but it seems unlikely that such reasons could account for the entire differential, particularly considering the lower level of stretch proposed compared to other companies.

- To take this into account we are setting performance commitment levels between those proposed by the company and those suggested by the Ministry of Housing, Communities and Local Government data. The company provides the formula and assumptions that were used in calculating the proposed outcome delivery incentive rate. We have reviewed the calculation approach for void performance commitments for all companies. The company's suggested formula includes both a payment rate and a Credit Rating Agency (CRA) rate in the calculation. These assumptions resulted in an outcome delivery incentive rate that does not reflect the expected decrease in customer bills that would result from identifying voids. In particular, they understate the benefits to customers from identifying voids, because customers receive a benefit from bill reduction from void identification regardless of whether the additional bill is paid. As such, we are intervening to remove these adjustments.
- We consider that caps, collars and deadbands are inappropriate for this performance commitment given the clear benefit to customers of bringing void properties in to billing. Caps, collars and deadbands would weaken the incentive of this performance commitment.

#### Intervention:

- We are intervening to set the performance commitment levels to reduce the percentage of voids (as a percent of total households) by equal amounts from 2019-20 to 2024-25: 2019-20 - 4.7%, 2020-21 - 4.50%, 2021-22 - 4.33%, 2022-23 - 4.15%, 2023-24 - 3.98%, 2024-25 - 3.80% (Units: percentage of properties unbilled)
- We are intervening to adjust the outcome delivery incentive rate based on an average wholesale bill of £360, marginal costs of £30, a cost sharing factor of 50%, and property numbers as provided by the company. The new rates are: Underperformance: £7.945 million per 1%, Outperformance: £4.145 million per 1%.
- We are intervening to remove all caps, collars and deadbands.

## 4.1 Executive summary

We are rejecting the changes to our performance commitment definition.

We note Ofwat's concern with the level of stretch of our original performance target and are therefore proposing a more challenging revised target against our original performance commitment definition.

We are applying a cap and collar on the outcome delivery incentive, in line with Ofwat's policy guidance on materially significant performance commitments.

## 4.2 Performance commitment definition

We have strong concerns with the use of the performance commitment definition suggested by Ofwat, as it is not developed enough to constitute an appropriate incentive. As it stands, the definition suggested by Ofwat does not sufficiently target water company performance, instead it includes the measurement of wider economic and social factors such as empty dwelling rates, rather than a water company's ability to keep accurate billing records.

The definition we proposed provides a more specific measure of how many accurately identified void properties are included in our billing system. We note that Ofwat's concern with our measure is not that the definition is unclear or inappropriate, but that the performance commitment stretch is not easy to identify.

Ofwat's intervention to amend the performance commitment definition has not been applied consistently across the industry, with some companies retaining their original (different) definitions. We are concerned that a mix of bespoke and common definitions for a performance commitment is confusing and erratic, as it is difficult to understand why some companies have had interventions applied while others have not, leading to uneven treatment of companies.

## 4.3 Performance Commitment Target

We consider it is more appropriate for the performance commitment to measure the verification of void properties on our billing system (i.e. ensuring that we are improving the accuracy of our records) rather than the Ofwat definition which simply measures the total number of void properties on the system (which may be completely legitimate empty properties).

However, we recognise that as our performance commitment is bespoke, it is not as easy for Ofwat to identify the level of stretch in the target through comparative regulation. We are therefore proposing to increase the target by a further 5% compared to the September and April business plan submissions. Overall, this means improving performance from our current 2018-19 performance of 75% to 90% by the end of 2025. Achieving this new target will be incredibly challenging and will require a fundamental change to our customer record management approach.

<u>Voids Verification (%)</u>	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
April/Sept Submission	75	85	85	85	85	85
DD Representation	75	86	87	88	89	90

#### 4.4 Outcome Delivery Incentive

We recognise that Ofwat have concerns with the adjustments we applied to our ODI incentive rate at the IAP submission for the Payment Rate and Credit Ratings Agency. We are therefore resubmitting the ODI rate (as appropriate for our performance commitment definition) without the adjustments:

We have derived the ODI calculation to reflect the reduction in customers' bills that would result from an increase in the identification of void sites:

Nbr of void sites per year (3yr average)	79,104
1% =	791
Cost per site =	£30
Average Customer Bill (rounded)	£400
Incremental Benefit =	£316,400
Incremental Cost =	£23,730

The following formulas and calculation provide the updated ODI rate for voids verification in our representation:

$$ODI_{outperformance} = incremental\ benefit\ rate \times 0.5$$

Where the triangulated benefit rate = £316,400 per %, providing an outperformance incentive value of **£158,200 per %**.

$$ODI_{underperformance} = triangulated\ benefit\ rate - (incremental\ cost \times 0.5)$$

Where the incremental benefit rate = £316,400 per %, and the incremental cost = £23,730 per % providing an underperformance incentive value of **£304,535 per %**.

## 5. Asset Health Incentive Collars

### 5.1 Executive summary

We are choosing not to make representations on the draft determination interventions on performance commitment targets and incentives for asset health. As these interventions substantially alter the balance of risk and reward across the package of outcomes, we are applying collars to the underperformance penalties, in line with Ofwat's own policy approach to limit materially significant incentives to 1% of RoRE of the price control.

### 5.2 Mains Repairs and Sewer Collapses

Ofwat has set out concerns with our forecast asset health performance, particularly relating to mains repairs and sewer collapses. We continue to believe that our initial plan, set out in September 2018 and resubmitted in April 2019, represents the best package of outcomes for our customer and the environment. However, we have incorporated the interventions on asset health measure in the draft determination into our revised plan in order to achieve an acceptable final determination for all stakeholders in December 2019, despite the fact that by incorporating the interventions on the asset health PC targets, our package of outcomes has been substantially altered. As a result, the plan no longer reflects the views of our customers nor provides an optimal or economic balance of performance and incentives. We have previously provided evidence demonstrating our relative customer priorities, which show that our customers support the focus on improving service areas which have a direct impact on the first (i.e. internal sewer flooding, supply interruptions etc), rather than underlying asset health measures.

We have also provided evidence outlining our concerns with moving to a comparative approach on asset health indicators. Our concerns remain, primarily that:

- Asset health indicators have previously not been considered appropriate as comparative measures, as the unique company circumstances, such as the legacy of the network and geographical factors, all affect the comparability of performance across companies. Ofwat has not adequately set out any case for change from this approach, and it is not clear that Ofwat has appropriate regard for the technical considerations of defining, measuring and improving asset health. This creates the very serious risk of uneven treatment of companies, with certain companies being unfairly penalised.
- The industry has not been given an appropriate opportunity to consult on the policy decision to use asset health indicators as a comparative metric. Such an approach was not included in the final methodology, published in December 2017, nor was it raised in the industry working groups on asset health throughout 2016 and 2017. The sudden shift in approach in asset health appears to create a retrospective regulatory position which penalises companies unfairly for simply following previous regulatory incentives and policy, breaching companies' legitimate expectations.
- Following work with Water UK, the definitions for mains repairs and sewer collapses have been standardised across the industry to provide a greater level of confidence that

companies are reporting like for like performance. While we are very supportive of this work, the reporting of these metrics is still not mature. This is acknowledged by the approach to shadow reporting that Ofwat has taken for these new definitions – it is clear from the RAG assessment of the reporting components that companies are not reporting consistently in the current 2015-20 period. We are therefore cautious of any the comparative metrics that use this immature and inconsistent data to forecast performance five years ahead.

- For the ‘unplanned outage’ performance commitment, the measure is completely new and has previously not been reported or standardised in the industry. We are one of several companies who did not have corporate systems in place to capture this information until recently, when the performance commitment was finalised in 2018. Not only is this measure very immature, it fails to capture the company specific circumstances. As we have previously highlighted, we have an integrated water network system which means that we can transfer water from one area of supply to another area of demand. This allows us to mitigate any impact of water outage (for any reason such as water quality or equipment failure) on the supply of water to customers. Despite this robust mitigation mechanism, we are still being penalised due to the use of this metric, which indicates that it does not capture this risk accurately. It is difficult to understand why financial penalties have been placed on a measure that is so immature, and that does not properly account for the regional circumstances of specific companies.

We have also previously outlined to Ofwat our concerns with placing such a strong emphasis, and financial penalty, on indicators which do not relate to a direct customer service outcome. As Ofwat acknowledge in the draft determination policy document, it is not possible to elicit customer valuations for changes in asset health measures, as customers do not directly experience any changes in performance.

Accordingly, we have targeted our investments and performance improvements at the measures where customers experience the greatest benefit. We have prioritised the services, such as sewer flooding and supply interruptions, which we know customers care about the most.

We consider that it is only right that these customer measures continue to receive the most attention, and that to maintain coherence in the regulatory framework, that these measures have the greatest financial incentives attached to them. Ofwat does not appear to have performed this check or calibrated the incentives between asset health and customer service measures appropriately.

For example, the interaction between the new asset health measure ‘mains repairs’ and customer service measures such as supply interruptions and leakage is extremely problematic. Ofwat has received a large volume of evidence from companies demonstrating this point. Yet, Ofwat’s position is that the number of repairs to mains pipes a company performs is an appropriate a proxy for the health of the asset. On this basis, Ofwat has set financial incentives on companies to reduce the number of repairs to mains pipes.

It is difficult to understand why it is appropriate to limit the number of repairs a company undertakes on its assets, particularly where the repairs are vital maintenance tools to ensuring that customer services such as leakage and supply interruptions are improved. The logic that the number of mains repairs indicates how much maintenance a network needs, and therefore its asset health, could equally work the other way. Surely it is preferable for a company to perform more mains repairs to improve asset health rather than reducing maintenance activity? Particularly where this has a demonstrable improvement for leakage performance or other customer service measures.

We are also concerned that the asset health metrics as they currently stand do not adequately encourage the long term resilience of the asset base and force companies to adopt artificial maintenance and renewal strategies which are not reflective of the specific performance of the asset base.

Despite these significant concerns, we have nevertheless incorporated the performance commitment and outcome delivery interventions on our asset health measures. The change in our risk profile for accepting the new asset health targets at draft determination is considerable.

The following tables outline the change in performance required for mains repairs:

<u>Mains Repairs</u>	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
April/Sept Submission	264.8	263.9	249.5	235.1	220.8	220.1
Draft Determination		164.1	164.1	164.1	164.1	164.1

The main repairs target set out in the draft determination is based on the best performance we have previously achieved - a level of 163.5 in 2012-13 (a 39% improvement on the previous year). This performance level was achieved in a year where we reduced leakage mitigation activity significantly, reducing the expenditure and resource in leakage reduction to the lowest level in 10 years<sup>10</sup>. The high number of repairs in 2011-12 is a result of the increased leakage activity, and the low number of repairs in 2012-13 is due to this reduction in leakage activity.

<u>Mains Repairs</u>	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Actuals	270.1	163.5	169.4	188.4	159.4	181.1
% change		-39%	4%	11%	-15%	14%

The expectation from Ofwat at draft determination is that we will be able to make a step change in improvement of 38% in year one of the next period. As a comparison, for the previous two price

<sup>10</sup> The reduction in leakage activity followed the year 2011-12 in which we invested heavily to improve our leakage position

controls Ofwat’s expectations for these types of asset indicators has been to demonstrate that they are ‘broadly stable’ across a basket of measures – recognising the inherent trade-offs between different measures and the impact of weather events on the asset base.

We have remodelled the risk position relating to the new performance commitment targets, and in the case of mains repairs, it is clear that there is a potential for significant financial penalties resulting from the draft determination intervention, and the performance commitment becomes financially material.

The new performance commitment targets are considerably outside of the p.90 estimates we modelled for the performance commitment at IAP stage. These estimates were not submitted in the APP1 data tables as we removed the reward element for asset health commitments, however we set them out below for information:

<u>Mains Repairs</u>	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
April/Sept Submission	264.8	263.9	249.5	235.1	220.8	220.1
p.90		217.6	205.8	193.9	182.1	181.5

The p.90 level was modelled based on an 18% improvement from the target, which was calibrated to take into account the extensive leakage reduction activity we will continue to undertake throughout 2020-25. The p.90 level is clearly above the performance commitment target set in the draft determination, making it statistically unlikely that the performance can be achieved.

In reviewing Ofwat’s draft determination policy decisions, we note that Ofwat has intervened to set collars (penalty limits) on performance commitments with enhanced incentive rates. The intervention is justified on the basis that it is necessary to balance the need to limit companies being exposed to enhanced underperformance payments, with the need to protect customers from excessive risk taking by companies which may lead to very poor performance<sup>11</sup>.

The scale of the interventions on our asset health performance commitments, and the comparative approach taken by Ofwat on asset health suggests that a similar approach to the enhanced performance commitment caps and collars should also be adopted here.

Applying collars based on the lower decile of performance, as Ofwat has done for the enhanced incentives, would not be appropriate for our asset health performance, given our comparative performance position. We are therefore setting an underperformance collar based on 1% of RoRE of the water price controls for mains repairs. We consider that this provides a fair balance of protection for customers for severe under performance, while providing us with some limitation to disproportionate penalties which may create financeability issues.

<sup>11</sup> Ofwat ‘PR19 Draft Determinations; Delivering Outcomes for Customers Policy Appendix’. Page 86

The following table outlines the process for setting the underperformance collar. We have adopted the 1% RoRE limit for the individual performance commitment to mirror the approach taken by Ofwat in limiting the outperformance payment on enhanced incentives.

<u>RoRE</u>	2020-21	2021-22	2022-23	2023-24	2024-25
Water (Networks and Resources) (£m)	1167	1199	1235	1271	1297
1% (£m)	11.67	11.99	12.35	12.71	12.97

Mains Repairs incentive rate = £588,000.

Number of performance units associated with 1% RoRE:

<u>RoRE</u>	2020-21	2021-22	2022-23	2023-24	2024-25
Performance Units	19.85	20.39	21.00	21.62	22.06
Added to PC Target to create PC Collar	183.9	184.5	185.1	185.7	186.2

This approach results in a collar which is similar to the p.90 performance commitment level modelled at September and IAP business plans for mains repairs, and therefore provides an extremely stretching collar level for limiting the financial exposure on the individual commitment.

### 5.3 Sewer Collapses

Similarly, for sewer collapses, the draft determination expectations for performance require a significant improvement in performance of 28% across the period, although this has been allowed a glidepath to the end of 2024-25:

<u>Sewer Collapses</u>	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
April/Sept Submission	18.98	18.22	18.17	18.13	18.08	18.03
Draft Determination	18.98	17.93	16.87	15.80	14.37	13.67

These performance levels have historically never been achieved for sewer collapses and amount to a very substantial step change from the upper reference limits in our current 'stability and reliability' performance commitment and previous serviceability measures.

Additionally, Ofwat has adjusted our delivery incentive, increasing the penalty rate by 6.5x for sewer collapses. The incentive rate increases to £685,000 per sewer collapse (per 1000km of sewer pipes) from £104,420 in our original business plan submission. The change in incentive rate is based on

Ofwat’s policy approach to adjust incentive rates where they are assessed as being outside the ‘reasonable industry’ range to the industry average.

Again, there is no evidence that the incentives have been calibrated with the totex allowances or relative performance levels. The marginal cost information provided by companies in September did not take account of the efficiency challenges in the totex allowances. Therefore, the industry average marginal costs used by Ofwat in determining the ‘reasonable range’ will overstate the cost (and therefore benefit) for customers.

Given the large financial incentives placed on the performance commitment, and the uncertainty present in the method and application of the target, we consider it is appropriate to apply a financial collar to the performance commitment. As with the mains repairs performance commitment, the adjustment to the target and the incentive rate results in the measure becoming significantly more material financially than other performance commitments in the package of outcomes.

We have adopted the same approach as outlined above for mains repairs, in that a limit of 1% RoRE is converted to the relevant performance level:

<u>RoRE</u>	2020-21	2021-22	2022-23	2023-24	2024-25
Wastewater (Networks and Resources) (£m)	1636	1756	1862	1940	1984
1% (£m)	16.36	17.56	18.62	19.4	19.84

Ser collapses incentive rate = £685,000.

Number of performance units associated with 1% RoRE:

<u>RoRE</u>	2020-21	2021-22	2022-23	2023-24	2024-25
Performance Units	23.88	25.64	27.18	28.32	28.96
Added to PC Target to create Collar (Nbr per 1000km sewers)	41.8	42.5	43.0	42.7	42.6

#### 5.4 Unplanned Outage and Treatment Works Compliance

For consistency, we have also adopted the approach to applying collars on the remaining asset health measures, using the same method.

The collar levels for unplanned outage and treatment works compliance are included below:

<b><u>PC Collars</u></b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>	<b>2024-25</b>
Unplanned outage (%)	11.6	10.9	10.6	10.1	9.5
Treatment Works Compliance (%)	86.2%	85.2%	84.3%	83.6%	83.3%

## 6. Leakage

### Action reference

YKY.OC.C9 YKY\_22

#### Intervention Assessment and Rationale:

- The company significantly reduces the proposed leakage reduction, in both volumetric and percentage reduction terms, in comparison with its business plan, but retains its initial level in 2019-20. The company presents its assurer's opinion that they do not consider the company has robustly demonstrated the evidence that underpins the revised reduction profile. The company revises its leakage reduction proposal and the proposed change is not driven by an outcomes action. We do not identify the company's rationale for the revised performance commitment levels in the company's response. The company retains its enhancement line at a reduced level in comparison with its September 2018 plan. We set stretching performance commitment levels for leakage reduction over the 2020-25 period, taking into account the performance of each company relative to the forecast 2024-25 upper quartile performance commitment levels and whether the 2020-25 percentage reduction is above 15%. We set out our rationale for setting performance commitment levels for this common performance commitment in 'PR19 draft determinations: Delivering outcomes for customers policy appendix'

#### Intervention:

- We are intervening to reduce the percentage reduction over the period from its proposed 25% to 20% which we consider stretching, based on comparative assessment with the sector. We note the company had proposed 25% reduction and the company's water resources management plan proposes a 33% reduction. We welcome Yorkshire Water's ambitions to go beyond stretching levels for base service and outperformance payments can be used to fund performance above the performance commitment level.

### 6.1 Executive Summary

We are amending the performance commitment target to 15% reduction over the period, in line with the industry performance commitments and the cost assessment in which enhancement expenditure for leakage improvements has been disallowed.

### 6.2 Performance Commitment Target

Ofwat has intervened at draft determination to align our % leakage reduction target with the improvements proposed by the rest of the industry. The draft determination sets out a 20% reduction on the three-year rolling average target by 2025, compared to the 25% reduction we included at the IAP resubmission and business plan.

In reviewing the interventions set out by Ofwat in the draft determinations for all companies on leakage, we recognise that even at a 20% improvement, our leakage targets are greater than most of the industry. Only two companies have greater leakage improvement targets than our proposal, Thames Water and South Staffordshire Water.

Ofwat has also changed the approach to assessing efficient totex expenditure for leakage improvements. At draft determination, a policy decision to disallow enhancement expenditure for leakage reductions that do not achieve an upper quartile level of performance has been applied.

Previously at the IAP, Ofwat had allowed for enhancement expenditure on a unit cost basis for any leakage improvements beyond 15%.

This has been removed by Ofwat at draft determination, so no additional expenditure beyond base allowances has been included for service improvements.

As we have set out in the executive summary to our draft determination representation and in previous evidence provided at the IAP stage, we do not agree with the Ofwat policy decision to assume that large changes in performance can be achieved solely through base cost allowances. Ofwat has not attempted to analytically understand the actual level of performance that is implied by the base totex models, or the likely costs for the industry of achieving performance improvements. This has created a material increase in risk, on both totex performance and service performance, for companies for the next five years. While such a policy approach could be justifiable if there was evidence that companies have systematically outperformed previous determinations, as our evidence demonstrates, this is not the case<sup>12</sup>.

However, in the interests of reaching a final determination that balances the needs of our stakeholders and allows us to deliver benefits for customers and the environment, we have removed £300m from our enhancement expenditure for all service improvements, including the £134m totex relating to leakage improvements.

Removing enhancement expenditure for improving service is a significant challenge for us. We have achieved industry leading levels of efficiency in previous price reviews and are assessed as efficient in terms of our current expenditure in the PR19 models. We have highlighted our concerns with the totex modelling approach for PR19 - which places undue weight on forecast efficient costs, and penalises companies who are historically efficient and who have large environmental programmes.

In removing enhancement expenditure for service improvements, we have substantially increased the risk of being able to deliver the plan. The costs and performance package underpinning the draft determination and incorporated in our representation no longer represent our central estimate for delivery.

In removing this expenditure, we have considered the impact on our performance commitment targets and assumptions regarding the levels of additional efficiency that can be achieved. We can accept the challenge from Ofwat to deliver upper quartile levels of performance for comparative measures. However, we do not consider it feasible to continue to offer performance improvements in leakage beyond the industry standard. We are therefore reducing our leakage performance commitment to a 15% improvement.

The 15% reduction in leakage is far from our original ambitions set out in our September business plan. However, we developed a 7-year leakage plan starting in 2018, on the basis that the costs for such a large improvement plan would be fairly assessed in the price review. As has become clear throughout the process, decisions surrounding leakage performance and cost allowances have been made as a matter of policy rather than through analytical or evidence-based assessments and, therefore, that plan is no longer achievable.

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<sup>12</sup> 'Financeability of the Notionally Efficient Firm: Top-down analysis'. Economic Insight, August 2019

It is obvious that the enhancement expenditure of £134m we originally included the business plan cannot be simply accommodated with the water base expenditure, particularly as much of this is operating expenditure. Similarly, given the extreme targets that have been set in relation to mains repairs, and the lack of recognition of the interactions between mains repairs and leakage improvements, maintaining a 20% leakage target is not achievable within these parameters.

We have therefore reverted to a 15% improvement in leakage.

Our revised leakage performance commitment is provided below:

Leakage (MI)	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
3yr Average	287.5	277.7	266.2	260.5	253.9	244.4
% Improvement		-3.4%	-7.4%	-9.4%	-11.7%	-15.0%
Annual Target	269	267.1	262.5	251.9	247.3	234
% Improvement		-0.7%	-2.4%	-6.4%	-8.1%	-13.0%

## 7. Performance Commitment Annual Profiles

Action reference
<b>YKY.OC.C20, YKY.OC.C21, YKY.OC.C22, YKY.OC.C23, YKY.OC.C24, YKY.OC.C26</b>
<b>Intervention Assessment and Rationale:</b> <ul style="list-style-type: none"><li>The company does not propose a performance level for every year. There is no reason that performance cannot be measured each year, and greater benefits will be realised if delivered more quickly. We have based this on equal improvement each year. The company could propose a different profile if it has evidence it is more appropriate, but still stretching.</li></ul>
<b>Intervention:</b> <ul style="list-style-type: none"><li>Individual performance profiles outlined for each performance commitment.</li></ul>

### 7.1 Performance Targets

Performance commitments where we incorporate the Ofwat proposed profile in the draft determination:

- Land conserved and enhanced (YKY.OC.20)
- Inclusive customer service (YKY.OC.23)

Annual performance profiles were also suggested by Ofwat at draft determination for the performance commitments listed below. These have been included in representations relating to the total performance commitment and are included in the document above:

- Length of River Improved (YKY.OC.C2)
- Voids Verification (YKY.OC.4)

For the remaining annual performance profiles, we outline our preferred profiles below.

### 7.2 Integrated Catchment Management

The integrated catchment management performance commitment is measured as a % of all catchments in the Yorkshire region. We originally intended to present the performance commitment as a simple count of the number of catchments where we adopt an integrated catchment management approach, however after extensive feedback from our Customer Challenge Group (the Yorkshire Forum for Water Customers), we amended the commitment to demonstrate the % coverage of performance.

As Yorkshire Water operate in 39 catchments; 1 single catchment equates to 2.6% of the total catchments. We are going to implement an integrated catchment approach in 3 catchments, which equates to 7.7% of all catchments.

To deliver this performance commitment, 1 catchment (2.6%) is planned to be completed for 2022. The final 2 catchments (5.1%) will be completed by 2025. On this basis, we suggest that the integrated catchment management phasing (which is cumulative) should be:

<b>Integrated Catchments</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>	<b>2024-25</b>
Ofwat DD	1.51%	3.1%	4.6%	6.2%	7.7%
DD Representation (cumulative)	0	0	2.6%	2.6%	7.7%

Whilst we recognise that Ofwat would prefer a more even improvement profile across the period, it is not possible to deliver an incomplete catchment plan, so the performance increments can only increase by 2.6%.

We have agreed the performance profile across the 5-year period with the Yorkshire Forum for Water Customers, and it has been deliberately phased in this way to allow the learning from a test catchment in the first two years of the period to inform the development of the approach for the second two catchments. It would not be appropriate to try and deliver an integrated catchment plan in year one of the period as it would not allow enough time for all the relevant partnership working and catchment assessments to be carried out.

Full details of the performance commitment are included in our September Business Plan submission (Appendix 19c, Integrated Catchment Management\_03)

### 7.3 Biosecurity

Our Biosecurity Performance Commitment is underpinned by several WINEP measures relating to Invasive Non Native Species, due for delivery in March 2025. Our initial performance commitment submission aligned with this, with the achievement of pathway management plans being linked to formal sign off by the Environment Agency of the relevant WINEP measures.

We recognise the benefits for our customers and the environment of bringing elements of this programme forward, however this must be balanced with a need to ensure that our formal commitment to review and consult with Environment Agency specialists and our external Biodiversity Advisory Panel is meaningful.

Additionally, there is a requirement for sufficient time to have passed post-plan implementation, to deliver robust audits to assess whether it has succeeded in changing behaviours. As such, we believe that it would not be feasible to complete a full consultation on a pathway management plan, build the necessary infrastructure to implement the plan, and then undertake post implementation audits for external review within a single financial year.

We have therefore proposed a new profile to reflect an accelerated, challenging programme which is also achievable, externally verified and ultimately drives cultural change.

<b>Biosecurity</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>	<b>2024-25</b>
Ofwat DD	2	4	7	9	12
DD Representation (cumulative)	0	3	6	9	12

#### 7.4 Creating Value from Waste

The phasing for the creating value from waste performance commitment is determined by two main factors.

- Firstly, as captured in the original documentation for this performance commitment, the programme of activity enabling the value creation includes a broad range of projects, each at different stages of maturity. Inherent to the nature of any change and innovation project is the time needed upfront to research, develop and implement a new approach.
- Secondly, the process to measure and report this new commitment is currently being trialled to ensure this specific application of our six capitals approach is mature and robust to meet the appropriate quality for the performance commitment.

<b>Creating Value</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>	<b>2024-25</b>
Ofwat DD	6	13	39	52	65
DD Representation (cumulative)	0	5	10	20	65

#### 7.5 Working with Others

The phasing for the working with others performance commitment is determined by two main factors.

- Many of our partnership schemes are multi-year projects and can we only finalise projects once they have completed and are delivering benefits to customers/the environment. These projects cannot be phased into year one targets, and so there will inevitably be a cumulative increase in the number of projects towards the end of the period.
- Our catchment restoration partnerships, groundwater protection partnerships and the integrated land management partnerships will take some time to establish and then will run for more than one year, and in some cases for the whole of the five-year period, as these are the timescales over which these types of land/catchment management interventions occur.

<b>Working with Others</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>	<b>2024-25</b>
Ofwat DD	9	18	27	36	45
DD Representation (cumulative)	3	9	18	30	45

## Additional Information Requests

### 8. Risk of Sewer Flooding

Action reference
<b>YKY.OC.C9 YKY_21</b>
<b>Intervention Assessment and Rationale:</b>
<ul style="list-style-type: none"><li>The company has provided detailed guidance on the assumptions it used in its analysis, and its full reporting tables, which appear to be appropriate. We are taking into account model percentage in our assessment of whether the performance commitment levels are set appropriately, and therefore do not think the measure needs to be separated in the way the company suggests. We have improved the definition of this common performance commitment in consultation with the industry following our IAP. We expect companies to confirm that they will be updating their approach to flooding resilience in line with the revised definition.</li></ul>
<b>Intervention:</b>
<ul style="list-style-type: none"><li>We are intervening to set out that the company should confirm that it is:<ul style="list-style-type: none"><li>using the updated parameters in the catchment vulnerability assessment (and setting out any additional criteria that it intends to use);</li><li>reporting the extent to which it uses 2D or simpler modelling; and</li><li>adopting FEH13 rainfall as standard, and if not, when it expects to do so.</li></ul></li></ul>

#### 8.1 Modelling Assessment

##### *8.1.1 Catchment vulnerability assessment parameters*

We have re-reviewed the updated parameters in the catchment vulnerability assessment and incorporated these into our methodology. However, this has not resulted in a change to our catchment vulnerability assessment. Our catchment vulnerability assessment aligns with the Ofwat document “Reporting guidance – Risk of sewer flooding in a storm”.

##### *8.1.2 2D modelling approach*

To keep the metric consistent across Yorkshire Water, we have used the simpler buffer zone approach to assess the flood risk, as opposed to the 2D methodology. We will move towards 2D modelling assessment, taking a risk-based approach, over the 2020-25 period.

##### *8.1.3 Use of FEH13*

Our current approach has used FEH99 rainfall data. We will be moving towards adopting the FEH13 approach across the 2020-25 period. We intend to assess the whole of the modelling stock using the same rainfall methodology and it is envisaged that the whole of the modelling stock will be assessed using the FEH13 rainfall for this metric over the 2020-25 period and will be communicated through the Annual Performance Report.

## 9. Risk of Severe Restrictions in a Drought

Action reference
<b>YKY.OC.C9 YKY_21</b>
<b>Intervention Assessment and Rationale:</b>
<ul style="list-style-type: none"><li>Intermediate calculations both give us confidence that companies have followed our definition appropriately and allow us to intervene appropriately if we do not consider the service levels are stretching. We would like companies to confirm that their performance commitment levels are reflective of their water resources management plan position.</li></ul>
<b>Intervention:</b>
<ul style="list-style-type: none"><li>This is a sector wide action. The company should provide a full set of intermediate calculations at a zonal level, underlying the risk calculation (for both baseline levels and performance commitment). The company should confirm that its performance commitment levels are reflective of its water resources management plan position. This should include the potential that it will have access to drought orders and permits The company should confirm which programmes of work will impact its forecasts.</li></ul>

### 9.1 Water Resource Management Plan Position

We can confirm that our performance levels for the risk of severe restrictions in a drought is formulated based on our Water Resource Management Plan (WRMP). The WRMP 2019 demonstrates that we are resilient to a 1 in 200 year drought event without the need for severe drought restrictions. As such, there are no calculations for number of people affected by restrictions. Below we outline our intermediate calculation methods for estimating our severe 1 in 200 year drought.

Table 10 in our WRMP tables shows that even in the event of a drought with a return period of greater than 1 in 400 years, we would implement long term drought options, but not severe restrictions (which we estimate would be required 1 in 500 years).

Our calculation methods for return period analysis are summarised below and described fully in our WRMP.

We have estimated return periods for rainfall and reservoir group inflows using extreme value analyses. For each inflow or rainfall series analysed, we have compiled a time series of each duration and start month. We have sorted the time series and assigned a plotting position to each data point. We have looked at the use of a number of different plotting positions, and the one chosen has a marked effect on the calculated return period.

For example, for a monthly rainfall series of 135 years, the minimum 6 month rainfall could have a return period of between 136 years (Weibull), to 270 years (Hazen). We have chosen to use Gringorten (240 years for the minimum value in a 135 year series, 170 year return period for the minimum value in a 95 year series).

To estimate the magnitude of different return period events, we have fitted a Generalised Pareto Distribution (GPD), (Malamud et al, 1996), to the driest 20% of years. We have used only the driest years to ensure the distribution is fitted to the extreme values only. The fit of the distribution varies, with some series having a very good fit, and others a poor fit, but we believe the results give a good indication of likely flows or rainfall for given return periods.

Since we have no risk of severe restrictions (rota cuts or standpipes) for events with a return period of 1 in 200 years, the population at risk of restrictions in this event is zero.

## Appendix 1

### Length of River Improved

The table below outlines the length of river improved by determinand. Where a river shows improvement against more than one determinand, there is the potential that the same length or part of the same length of river, will benefit. It not possible to specify exactly at this stage if the cumulative benefits would happen, as these are based on modelled numbers.

Catchment	River	Length of river improved (km)			Clean water improvements
		Waste water improvement schemes			
		Phosphorus	Ammonia	AMP6 UPM Solutions	
Aire Calder	Bridgehouse Beck	2.78			
	Eller Beck	2.41			
	Haw Beck	0.31			
	Holme (Trib of Colne)	6.83			
	Lin Dike	3.34			
	Mag Brook	3.74			
	Oakenshaw Beck	3.72			
	River Aire	99.22			53.33
	River Calder	70.66			0.94
	River Colne	7.24			
	River Ryburn	3.90			
	River Worth	7.19			
	Wyke Beck	0.71			
	Pudsey Beck				12.56
<b>TOTAL</b>	<b>212.05</b>	<b>0</b>	<b>0</b>	<b>12.56</b>	<b>54.27</b>
Derwent	Bishop Wilton Beck	4.10			
	Blackfoss Bk	11.32			
	Pocklington Beck	2.17			
	Walmouth Beck	6.40			
	<b>TOTAL</b>	<b>23.99</b>	<b>0</b>	<b>0</b>	<b>0</b>
Don Rother	Bentley Mill Stream	1.34		1.18	
	Cawthorne Dike	1.74			
	Ea Beck	16.65		4.5	
	Grimethorpe Dike	3.73			
	Redleadmill Brook	0.15			
	River Dearne	36.78		4.1	
	River Doe Lea	10.81	8.44		
	River Don	87.41			24.58
	River Dove	6.78			
	River Drone/Whitting	6.80			
	River Rother	46.06	7.39		

Catchment	River	Length of river improved (km)			Clean water improvements
		Waste water improvement schemes			
		Phosphorus	Ammonia	AMP6 UPM Solutions	
	River Went	24.19			
	Silkstone Beck	6.81			
	The Skell	5.82			
	Trib of R.Dearne (Bretton Brook)	1.46			
	Trib of R.Went	3.07			
	Little Don			2.1	
	Loxley				0.44
	<b>TOTAL</b>	<b>259.6</b>	<b>15.83</b>	<b>11.88</b>	<b>25.02</b>
<b>Rivers Swale, Ure, Nidd and Ouse (SUNO)</b>	River Burn				13.56
	Crimple Beck	4.45			
	Cundall Beck	9.23			
	Hambleton Beck	3.52			
	Healam Beck	4.83			
	Kex Beck	9.76			
	New Parks Beck	10.43			
	Otterington Beck	6.44			
	River Foss	25.19			
	River Nidd	27.25			
	River Ouse	0.95			
	River Skell	2.36			
	Selby Dam	8.86	8.86		
	Thornton Beck	2.61			
	Upper Fox Drain	1.26	1.27		
	Ure				6.49
	Wharfe				5.11
<b>TOTAL</b>	<b>117.14</b>	<b>10.13</b>	<b>0</b>	<b>25.16</b>	
	<b>Total by determinand</b>	<b>612.78</b>	<b>25.96</b>	<b>24.44</b>	<b>104.45</b>
	Total waste	663.18			
	Total clean				104.45

## Appendix 2:

### Urban Waste Water Regulations: Delivery of schemes to meet the requirements for new Sensitive Area Designations

creating a better place  
for people and wildlife



Information Letter: EA/05/2019  
Date: 5th June 2019

To: Regulatory Contacts in Water and Sewerage Companies in England

**Urban Waste Water Regulations: Delivery of schemes to meet the requirements for new Sensitive Area Designations**

Dear Sir/Madam

We previously told you that the effective date of designation for the new Urban Waste Water Treatment Regulations Sensitive Areas (UWWTR SA) was 13th May 2019. We now have received confirmation from Defra that, in line with the Regulations, the additional treatment and associated monitoring requirements need to be in place within 7 years of designation. This means that the latest date for delivery for the required treatment is 12th May 2026.

We will amend the delivery date for the UWWTR SA Schemes with the U\_IMP2 and U\_IMP3 driver codes on the PR19 Water Industry National Environment Programme (WINEP) to reflect this date. We will also change the managing uncertainty flag from Amber to Green reflecting the confirmed requirement to deliver these schemes.

Copies of this letter are being sent to Kate Barbier at Defra, Bart Schoonbaert at Ofwat, and Stuart Colville at Water UK.

If you have any queries please contact Keith Davis, Water Quality Regulatory Development Manager, Environment and Business, [keith.davis@environment-agency.gov.uk](mailto:keith.davis@environment-agency.gov.uk) or Tel 07769 934832.

This letter is being sent electronically to Regulatory Contacts and hard copies of the letter will not be sent. Please can you confirm receipt by e-mail to [Kath.Peirce@environment-agency.gov.uk](mailto:Kath.Peirce@environment-agency.gov.uk).

Yours sincerely

A handwritten signature in black ink that reads "H Wakeham".

Helen Wakeham  
Deputy Director - Water Quality, Groundwater and Land Contamination

customer service line 03708 506 506  
[gov.uk/environment-agency](http://gov.uk/environment-agency)

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