



**Building a Better Future:
Response to Ofwat's
Initial Assessment of
Thames Water's PR19
Business Plan**



Building a better future

Our improved ambition

	September Business Plan	April Submission
AVERAGE ANNUAL COMBINED BILLS	Flat average household bills from AMP6; Increasing bills in AMP8	£5 or 1.3% reduction by the end of AMP7; Flat average household bills in AMP8
Priority Services Register (Number of customers benefitting)	400,000	410,000 (Ofwat's benchmark)
KEY OUTCOMES		
Pollutions	18% reduction	30% reduction
Internal sewer flooding	15% reduction	20% reduction
Supply interruptions	6% reduction	20% reduction
Leakage	606MI/d to 509MI/d 15% reduction	636MI/d to 509MI/d 20% reduction
<i>Cost of improved outcomes</i>		No additional costs requested
COSTS		
Average unit base opex efficiency per customer ¹	13.6% reduction	22.5% reduction
Totex	£11.7bn	£10.9bn (£10.65bn + c.£0.25bn Uncertainty Mechanism)
FAIR BALANCE		
Gearing Sharing	-	A Gearing Sharing Mechanism
CUSTOMER ACCEPTABILITY	67%	87%

¹ Normalised for power and rates; measured per property, from AMP6 to AMP7.



Progress since September

Since September 2018, we have been busy implementing our plan to deliver more for our customers:

- **Improving customer interactions**

- The majority of our customers will be migrated to new digital billing platform by the end of 2020;
- Launched in December 2018, with over 37,500 customers already transitioned, the system is simplifying how customers pay bills and register for our services; and
- As part of the programme, we've launched a new online platform to help customers transact more easily with us.

- **Step change in IT performance**

- As part of over £60m investment in our IT infrastructure, we have now upgraded the network at key sites, including our head office and call centre, improving security and providing resilience;
- We have migrated our mainframe from a physical box to a cloud based platform, providing additional capacity and resilience; and
- IT stability and performance continues to show a marked year on year improvement and we continue to drive down the time it takes to restore services.

- **Better care for customers**

- There has been a record increase in the number of customers we are helping with our social tariffs, increasing by over 20% between August 2018 and March 2019; and
- We are now insourcing Local Housing Association customer relationships, giving direct line of sight to those customers. This enables us to be more proactive to ensure they are getting the help they need and are on a tariff appropriate to their financial circumstances.

- **More effective incident response**

- The impact of recent extreme weather events on our network highlighted the urgent need for greater visibility of our operations in 'real-time';
- We have real-time visibility of all our water systems, allowing us to see supply, demand, storage and predicted demand at 15 minute intervals. This is allowing us to respond better and ensure customers are kept in supply;
- We have secured a dedicated, bespoke water bottling capability which will deliver up to 1 million litres per day. To further improve resilience, the plant is located outside the Thames Water region; and
- As part of the upgrade to our incident management capability, we launched a new real-time *incident viewer* tool, which shows customer contacts, status of operational work, critical pressure points and bottled water stations during an incident.

- **'Smarter' blockage prevention**

- We have now installed over 1,000 monitors on our sewer network that alert us when there is a potential blockage. These monitors enable more sophisticated network modelling, informing where we should focus sewer cleaning to prevent floods or pollution; and
- We are in the process of developing a very low cost sewer monitor and trials will begin shortly.

- **Focusing our approach to reducing leakage**

- In November 2018 we set up a specialist, cross-functional Leakage Task Force to better understand our leakage performance and the most effective mitigation measures; such as using technology to improve detection and deploying CALM network technology; and
- During the last two years, we've increased the number of crews dedicated to finding and fixing leaks by 75%.



Enhancing our plan for 2020 to 2025

In September we published our Business Plan for 2020 to 2025. We laid out how we are going to invest to build a better future for our customers and our region, create customer advocacy and enhance the environment we rely on. Feedback from 1 million customers informed our plan and we stand by the principles of our September Business Plan.

We've been putting our plan into action and have already reached some key milestones, which will allow us to respond much better to customers now and in the future.



Evolving our plan

Since we submitted our Business Plan in September, we've listened to, and welcomed feedback from our customers, stakeholders and regulators. The majority of feedback has been positive, and stressing the need for investment to improve resilience and meet the needs of customers. We were also upgraded to Ofwat's 2nd tier for assurance, data quality and consistency in its company monitoring framework assessment.

In January 2019, Ofwat initially assessed our plan as requiring *significant scrutiny*. It challenged us to stretch our key performance commitments, including pollutions, supply interruptions and leakage; it questioned our enhancement investment cases; and at the same time it wanted us to deliver the plan for a lot less money - £9.4bn instead of £11.7bn.

We've listened carefully to Ofwat's feedback and have been through a rigorous process to re-interrogate our delivery plans, demanding more of our ambition for technical change and productivity improvements. During this review, a primary focus has been to see if we can reduce customers' bills. Affordability continues to be a key issue for both our customers and Ofwat, and I am pleased to report that we are able to reduce the average annual combined bill by £5 in real terms.

Delivering our improved plan will not be easy; however it can be achieved. Since our plan remains focused on our customers, we've taken on some key additional challenges to enhance our plan and deliver an even better package. This April Submission commits us to:

- **Deliver better performance on pollutions, internal sewer flooding and supply interruptions; while stretching our leakage performance to reach the current target;**
- **Find a further £400m in base cost efficiencies and £157m in enhancement cost efficiencies;**
- **Remove the risk to customers from uncertainty about some costs – £175m of uncertain costs have been removed into recovery mechanisms, with the option of a mechanism for a further £253m;**
- **Agree a form of gearing sharing mechanism to incentivise de-gearing, while paying historically low dividends to shareholders; and**
- **Reduce our average annual combined household bills by £5, equivalent to 1.3%, by 2024/25, in real terms.**

Clearly, these additional challenges will stretch us. If differences remain between our plan and Ofwat's assessment, we commit to work constructively with them to explain the merits of our April Submission.

Along with the changes we have made, we maintain our commitment to support improved water quality and resilience, including our ambitious lead pipe replacement programme, our catchment management programmes and investment in water production and distribution.

Our customers believe this is the right plan, with 87% acceptability after testing the enhanced package with them.

Our shareholders, Board and executive team are committed to delivering this plan, a crucial stepping stone in the pursuit of our vision to be "*Here for you, in a changing world.*"

Steve Robertson, CEO, Thames Water Utilities Ltd

Our strategic priorities

Our strategic priorities are:

Deliver brilliant customer engagement to create lifelong advocacy

As active participants in the water cycle, it is essential our customers feel we are engaging with them in the right way, on their terms, and that we're making a positive connection in every interaction.

Invest in resilient systems and assets

Customers have told us they expect us to be more resilient in the future. Increasing and sustaining resilience requires us to take a long-term perspective on investment and operational performance across all cycles of the business.



Use data from customers, operations and the environment to make better decisions

To make smarter business decisions and deliver better customer outcomes, we will strengthen the principle of turning data into information and insight, to drive our actions, across all areas of our business.

Protect and enhance the environment

We rely heavily on the environment for the provision of our services.

We are passionate about being responsible custodians of the water cycle and the environment.

Build a collaborative and capable team, dedicated to serving our customers

To deliver our vision for our customers, there are critical skillsets and characteristics we need to nurture and strengthen within our teams. We also need to work collaboratively with our supply partners and ensure alignment with our customer outcomes.



Delivering better outcomes

	September Business Plan	April Submission
KEY OUTCOMES		
Pollutions	18% reduction	30% reduction
Internal sewer flooding	15% reduction	20% reduction
Supply interruptions	6% reduction	20% reduction
Leakage	606MI/d to 509MI/d 15% reduction	636MI/d to 509MI/d 20% reduction
<i>Cost of improved outcomes</i>		No additional costs requested

Ofwat feedback

Ofwat's IAP challenged us to seek improvements across a range of performance commitments. Ofwat also challenged the financial incentives around key performance commitments to be more balanced and to provide greater protection for customers.

Our response

We are responding positively to the challenge of finding improved performance outcomes. Based on feedback from Ofwat, and work we have done since our submission in September, we have decided to stretch three performance commitments: pollutions, internal sewer flooding and supply interruptions. Further, we maintain our original leakage target despite our risk-adjusted forecast for the end of this planning period being higher than our original assumption.

Wastewater: 30% reduction in pollutions and 20% reduction in internal sewer flooding incidents

Our performance is already better than average for *wastewater* outcomes. We recognise that our September Business Plan fell short of the Environment Agency's (EA) ambition to reduce pollutions. Therefore, we are challenging ourselves to find ways to **reduce pollutions by 30%** from 2019/20, to only 19.5 incidents per 10,000km of sewer by 2024/25, meeting the EA's expectation. This additional challenge would **take us to the upper quartile benchmark**.

We are also challenging ourselves to find ways to **reduce internal sewer flooding incidents by 20%**, to only 995 incidents by 2024/25. Using existing means, the additional cost of delivering these improved outcomes would have been £70m; however, work we have done since September gives us a degree of confidence that we can meet these outcomes through innovation:

- We are digitalising our network with low-cost sensors to better understand 'hotspot' areas and enable us to be more proactive in our maintenance – we plan to increase the number of sewer sensors up to 200,000 by 2025;
- This will allow us to improve our 'virtual blockage' modelling capability to pinpoint areas for sewer cleaning; and
- Use the data we have from this modelling to better target our 'Bin it, don't block it' campaign.

Water: 20% reduction in supply interruptions

We recognise that our water performance is below the industry average. Our London water pipes are over 70 years old, on average, which are the oldest in the country, which creates a unique challenge. Over the next 30 years, our ambition is to 'replumb London' to ensure it has modern, world-class water infrastructure. We recognise the need to improve performance and over the last 18 months, we have continued to invest substantially. Therefore, we are challenging ourselves to find ways to **reduce supply interruptions by 20%** by 2024/25 to only 8.5 minutes per property, which is stretching in light of our legacy asset age. The main lever for the improving supply interruptions performance is the introduction of CALM network operations across our network.



There are two parts to this:

- Use our real-time data insight capability to identify pressure spikes and transients, which are more likely to cause bursts. This will allow us to improve network management and ensure the network operates within its design parameter more often; and
- Install new technology across our network to ensure a 'calmer' operation, such as variable speed drives which will reduce pressure spikes versus traditional fixed speed pumps.

Water: 15% reduction in leakage from 2019/20

We recognise the importance in reducing *leakage* from our ageing network. Our current leakage performance is not what we would like it to be, largely because of the extreme weather events in 2018. While we remain committed to the original 606MI/d target, we estimate that performance, on a risk adjusted basis, is more likely to be around 636MI/d for 2019/20. This would still represent the best ever leakage performance in our history.

We have increased focus on our leakage activity since the submission of our September Business Plan. In November 2018, we set up a dedicated cross-functional Leakage Task Force to:

- Improve insight to understand why the network breaks, so we can be more proactive in preventing leaks;
- Make better use of new and existing data, to predict leaks and improve the accuracy of leakage detection;
- Ensure we maximise the productivity of our 'find and fix' capability;
- Understand the implications of this level of 'find and fix' on our network and whether it causes increased network deterioration; and
- Accelerate the CALM networks programme to reduce pressure related bursts.

In our September Business Plan, we committed to a 2024/25 leakage target of 509MI/d. This represented a 15% reduction against our 2019/20 target. In spite of the challenges we have faced, we are committed to **maintain this ambition** in our AMP7 plan. This commitment is equivalent to a **20% leakage reduction over AMP7** from our current forecast for 2019/20.

Outcome Delivery Incentives

We have also set out a more balanced financial Outcome Delivery Incentive (ODI) target exposure, to increase focused incentives on the business. These changes have increased the upside return on regulated equity from +0.47% in our September Business Plan to +0.83% in our April Submission. The downside has remained unchanged at -1.53%.

While this April Submission forms a complete package of measures, we recognise the additional performance stretch, together with reduced budgets, can only increase delivery risk on our operation. While there are some remaining gaps between this April Submission and Ofwat's IAP modelling assessment, we have concerns about stretching the operation any further. This April Submission includes suggestions to help explain remaining differences.



Addressing the cost challenge

	September Business Plan	April Submission
COSTS		
Average unit base cost efficiency per customer ²	13.6% reduction	22.5% reduction
Totex	£11.7bn	£10.9bn (£10.65bn + c.£0.25bn Uncertainty Mechanism)

Ofwat feedback

Ofwat's IAP challenged us to seek out further cost efficiencies. The regulator's initial assessment sought to reduce our total cost allowance (totex) by £2.3 billion, covering investment projects and our day to day running costs – in addition to the 13.6% average base cost efficiency per customer that we had already put into our September Business Plan².

Ofwat's initial assessment of reducing these budgets also gave no further allowances for meeting the extra stretch they sought on performance commitments.

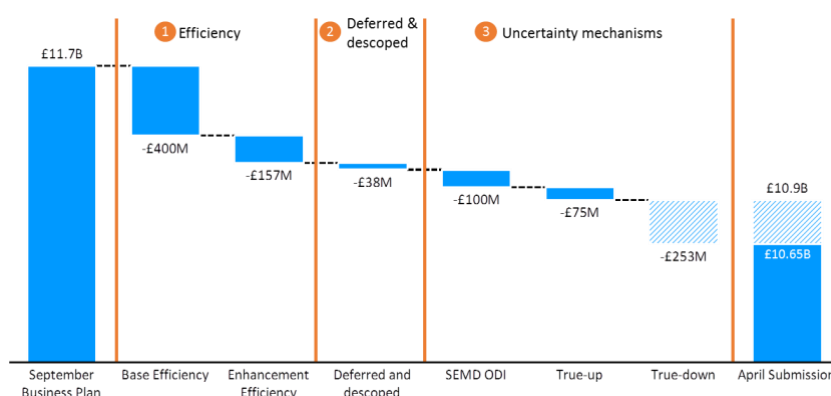
Our response

In discussion with Ofwat, it is apparent that there is support for the majority of our investment programme, but that there is an expectation that we deliver it more efficiently.

Following this feedback, we have re-examined our projected expenditure to identify further efficiency opportunities beyond the 13.6% average unit base cost reduction and the rigorous process we went through to validate an efficient capital maintenance and delivery programme.

We have categorised efficiency opportunities in to three areas:

- Efficiency improvement;
- Deferring and descoping some projects; and
- Uncertainty Mechanisms for less certain spend.



Efficiency improvement

We believe that we are able to reduce base costs by £400m – £25m in Retail, £187m in Water and £187m in Wastewater. This reduction is partially predicated on work that we have done since our September Business Plan; although this has yet to be locked into firm plans, resulting in greater delivery uncertainty. However, we have listened to the feedback and are prepared to take the additional stretch challenge, by identifying more innovative ways of delivery and areas of efficiency. The assumptions behind this reduction are:

- Retail - £25m:** Based on an acceleration of *self-serve* due to the implementation of Project Spring (our new customer billing platform) and the acceleration of our new web platform that offloads contact to lower cost, more effective channels;

² Normalised for power and rates; measured per property, from AMP6 to AMP7.



- **Water - £187m:** Based on reducing the quantum and cost of failure by applying our CALM network philosophy and rolling out a new digital work management platform to ensure maximum field productivity and minimal repeats; and
- **Wastewater - £187m:** Based on digitising our sewer network by rolling out low cost monitors and a more rapid expansion and exploitation of our Fieldworks Work Management platform (that has already been rolled out to all blockage engineers).

In addition, we have identified £157m of enhancement efficiency opportunities. These are:

- **£85m efficiency challenge on our metering programme:** We have made several commercial and operational improvements over the last 12 months, since our original forecast was put together;
- **£20m efficiency challenge on our Water Resource Management Plan (WRMP) programme:** This is as a result of reviewing the activities already included in our botex programme alongside planned enhancement activities;
- **£20m efficiency challenge on water network emerging growth projects:** The scope of some of our growth projects is as yet undefined and we have accepted an additional efficiency challenge using Ofwat's feeder model as a point of reference; and
- **£32m efficiency challenge on other activities:** Such as trunk mains monitoring, urban pollution management studies and our odour reduction programme.

Delivering this incremental efficiency, in addition to the 13.6% average unit base cost reduction we outlined in our September Business Plan, is a challenge and introduces additional risk in to our plan. We are currently working to finalise plans to ensure delivery of these stretching commitments.

Deferring and descoping some projects

We have deferred and descoped £38m of enhancement programmes:

- Cancelled £5m of solutions to reduce Metaldehyde levels and £9m of river flooding resilience; and
- Deferred £24m of spend on transferred private pumping stations and sewers into AMP8.

Uncertainty Mechanisms

Over a number of spend items where there is uncertainty, we propose the following mechanisms:

- **Extra ODI (£100m):** In which allowances are only recovered if the external cost driver outturns:
 - *SEMD:* £100m of spend, subject to DEFRA finalisation of the scope of work required;
- **True-up Uncertainty Mechanism (£75m):** In which allowances are only recovered if the external cost drivers outturn:
 - *Business Rates:* £75m, which relates to the difference in assumptions between Ofwat's IAP and our plans;
- **True-down Uncertainty Mechanisms (£253m; not including £151m Strategic Water Resources):** In which allowances are taken from the RCV, if an Ofwat gateway review concludes that the spend is unnecessary, given greater clarity at that point, funds are returned to customers:
 - *North East London resilience scheme:* £181m for the first phase of a multi-decade investment to improve water supply resilience across London; and
 - *National environment programme:* £72m for a small number of atypical projects: sanitary parameters, phosphate, first time sewerage.

Strategic Water Resources: Further, £151m has been allocated by Ofwat for developing future water resources. Given the uncertainty, Ofwat has suggested a mechanism with gateways. The specific treatment of this item will be clarified through the remainder of the PR19 review.

Together with the cost efficiencies already included in our September Business Plan, this additional challenge **increases our average base cost efficiencies per customer from 13.6% to 22.5%** between AMP6 and AMP7. On a like for like basis, our April Submission reduces totex to £10.9bn from £11.7bn in the September Business Plan.

While this April Submission forms a complete package of measures, we recognise the additional performance stretch, together with reduced budgets, can only increase delivery risk on our operation. While there are some remaining gaps between this April Submission and Ofwat's IAP modelling assessment, we have concerns about stretching the operation any further. This April Submission includes suggestions to explain remaining differences.



Balancing a fair risk and return

	September Business Plan	April Submission
FAIR BALANCE		
Gearing Outperformance Sharing	-	A Gearing Sharing Mechanism

Ofwat feedback

Ofwat's IAP challenged us to find greater balance in our plan. Specifically, Ofwat asked the industry to share with customers the benefits it perceives from higher gearing. Ofwat also challenged our distributions and executive pay policies.

Our response

We are responding positively to the challenge of finding extra balance in our plans. We are committed to being a responsible company for our customers.

Governance

We have already taken measures to meet the challenge on our governance arrangements. We have appointed three independent Non-Executive Directors to our Board since September 2018. Our Board now consists of a majority of independent Directors and we have a more diverse Board with a broader range of skillsets than in the past.

Over the last 12 months, we have made considerable progress improving the governance of our company. We have updated the matters reserved for shareholders and in February 2019, we completed the closure of our Cayman Island subsidiaries, which were a legacy from previous shareholders.

Distributions policy

After three consecutive years of no dividends to external shareholders during AMP6, our shareholders are supportive of the Board's decision to distribute minimal dividends during AMP7, in effect re-investing equity returns back into building operational and financial resilience into the business. However, it is important to ensure the interests of shareholders and management are aligned with our customers, so that investment and the performance of our future operations are appropriately incentivised. Therefore, we have clarified our approach to distributions, taking into account the principles promoted by 'Back in Balance'.

Executive pay

We are committed to meeting the 'Back in Balance' expectations for executive pay. Therefore, we have revised our executive pay policy, to align management remuneration with customer outcomes, which are at the heart of our plans. We have also committed to greater governance oversight over remuneration, together with increased transparency.

Financial transparency

We want to continue to simplify our corporate structure, thereby increasing financial transparency. We are prioritising the repayment of our £1.97bn intercompany loan (between TWUL and its immediate holding company) and reducing gearing. In April 2019, we will be de-gearing and reducing the intercompany loan by £250m³ and we plan a further £600m reduction by end of AMP7. Subject to investor appetite and market conditions, we will explore the possibilities of stretching our de-gearing beyond these planned levels. In the event that this is realised, this could potentially allow us to make even more significant reductions in the level of the intercompany loan.

Fair return

Ofwat will be assessing the appropriate fair returns for shareholders. This April Submission provides market based evidence to support this work. The evidence shows that the industry weighted average cost of capital is around 2.7% (real, RPI-stripped) for the appointed business. However, ahead of Ofwat's analysis, we continue to use the regulator's early view rate of 2.4% in our data tables.

Gearing sharing mechanism (GSM)

Finally, while we have challenged the theoretical basis for creating a mechanism for gearing outperformance sharing, if Ofwat intends to apply a mechanism, this April Submission incorporates and recommends a progressive tiered gearing sharing mechanism. This is aimed at incentivising de-gearing in the interests of customers, through marginal penalty rates. We would like to engage with Ofwat to discuss this area and how our tiered GSM recommendation could work in practice.

³ We plan on injecting £250m of cash into the business of which c. £220m is expected to pay down the principal of the intercompany loan, the remaining will be used to repay the accrued interest associated with the intercompany loan.



A fair package for customers

	September Business Plan	April Submission
AVERAGE ANNUAL COMBINED BILLS	Flat average household bills from AMP6; Increasing bills in AMP8	£5 or 1.3% reduction by the end of AMP7; Flat average household bills in AMP8
Priority Services Register (Number of customers benefitting)	400,000	410,000 (Ofwat's benchmark)
CUSTOMER ACCEPTABILITY FOR AMP7	67%	87%

Customer feedback

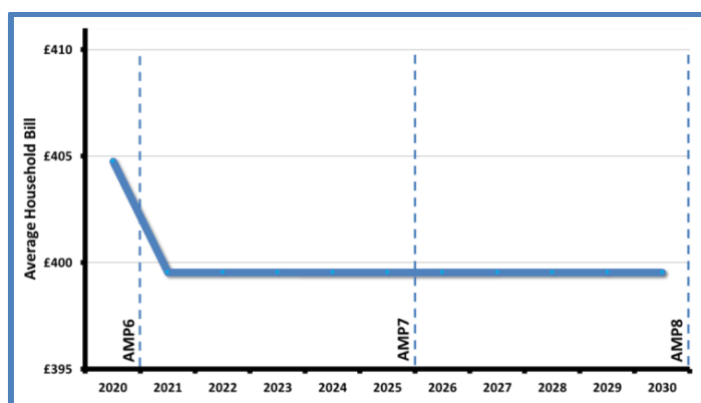
Since September, we have continued to engage with our customers to help improve customer service and to inform our April Submission, collecting feedback from around a further 182,000 customers. We have asked them about some key aspects of our business – including the WRMP, water supply resilience in North East London, drought resilience and protecting chalk streams, and on PCs and ODIs. We are pleased that a significant majority of customers support our **April Submission positions for AMP7 (87% acceptable, 81% affordable) and for AMP8 (86% acceptable, 84% affordable)**. This compares favourably to the testing of our September Business Plan, where customers found our AMP7 plan to be acceptable (67%) and affordable (68%); while our AMP8 was found to be acceptable (60%) and affordable (60%). Our customer engagement and how we have reflected the findings in our April Submission has been reviewed and challenged by our CCG.

Helping customers and reducing bills

While we appreciated the recognition of our work for customers in the most financially vulnerable circumstances, we want to go further. Therefore in this April Submission, we commit to **increasing the number of customers on our priority services register to 410,000, meeting Ofwat's expectations** - this is over seven times the 57,000 customers that benefitted in March 2018. In addition, we will continue to offer our social tariff to at least 200,000 households, which is over four times the 49,000 households that benefitted in March 2018. We will achieve this through collaboration with utility and third sector partners, as well as employee advocacy and direct marketing.

Our September Business Plan balanced investment in our future operation, with no increase in average combined bills from the end of AMP6. We have listened to Ofwat's feedback and have taken on additional cost, performance and risk/return balance challenges. We want to reflect this challenge through **reducing the annual average combined household bill paid by our customers by £5 or 1.3%, by the end of 2024/25, in real terms**.

Further, through careful analysis of our longer term plans, we expect there will be **no increase in average combined household bills in real terms for the following 5 year period, up until 2029/30**; this is compared to an increase in AMP8 bills projected in the September Business Plan, as shown below⁴.



⁴ Represents our current forecast of average combined bills (pre-rebate) for AMP8, in 2019/20 prices, subject to PR24 regulatory review.



Delivering our plan

We are committed to investing in our business and infrastructure to improve the service we give to our customers. Since submitting our September Business Plan, we have already started its delivery and over the last few months have further enhanced performance and improved efficiency.

In this April Submission, we have responded to Ofwat's IAP challenges, as well as those of our customers and other stakeholders. This has led to us proposing a plan with even more ambitious performance outcomes, while bearing down on totex. Together with the efficiencies already in the September Business Plan, the additional commitments in this April Submission represent **a substantial efficiency challenge**. Inevitably, there is an increase in delivery risk associated with this package; however, we are fully committed to delivering the right service for our customers.

Given the step up in investment, Ofwat is correctly scrutinising our plan to make sure it is in customers interests. 87% of customers support our plan. We believe this is the right plan for our customers, our shareholders, the environment and the region, and while the plan is extremely stretching, we have confidence that we can deliver it. We look forward to engaging with Ofwat and other stakeholders over the coming months to finalise the plan and build a better future for all of our customers.



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Section 1

Introduction

A Our response to Ofwat's IAP

- 1.1 We published our Business Plan for PR19 in September 2018 ("September Business Plan"). This outlined an ambitious programme of investment for the future of our operation, an efficient projection of our base costs and a fair return for shareholders – all in the interests of our customers.
- 1.2 On 31 January 2019, Ofwat published its Initial Assessment of Plans ("IAP") for all water and sewerage companies, and water only companies in England and Wales. Ofwat's IAP for Thames Water rated the September Business Plan as requiring *Significant Scrutiny*. Ofwat asked for a response to the IAP by 1 April, together with answers to a number of action points, revised data tables and a revised financial model.
- 1.3 This document provides our response to Ofwat's IAP for Thames Water ("April Submission"). We have listened to the feedback from the IAP about our September Business Plan, as well as from our customers and stakeholders. In this April Submission, we describe the important areas in which we have taken an additional challenge compared to the September Business Plan, following a significant re-evaluation of our operation.
- 1.4 While this April Submission forms a coherent package, the additional challenge we have taken, specifically on stretching performance commitment outcomes, with a lower overall cost envelope, creates a greater delivery risk.
- 1.5 We want to engage with Ofwat over the remainder of the PR19 regulatory review, to explain the merits of our April Submission.

B This document

- 1.6 This document focuses on key areas of concern for Thames Water, our customers and Ofwat within the following sections:
 - **Section 2: Outcomes** – Describes our additional challenge on our performance commitments;
 - **Section 3: Costs** – Describes our additional challenge on costs;
 - **Section 4: Risk and Return** – Describes our additional challenge to add balance to our plans;
 - **Section 5: Confidence and Assurance** – Describes the measures we have taken to understand customer feedback and assure the April Submission;
 - **Section 6** concludes.
- 1.7 We also include a number of appendices that provide greater detail on key topics.



- 1.8 The core Sections on outcomes, costs and risk and return are identically structured to aid the understanding of the additional challenge that we have taken in this April Submission:
- **Our September Business Plan:** Reprises the relevant areas already planned;
 - **Ofwat's IAP:** Summarises the IAP's feedback;
 - **Additional stretch in our April Submission:** Describes the measures we will take to challenge ourselves further;
 - **Additional delivery risk:** Describes the nature of the delivery risk taken because of the additional challenge; and
 - **Explaining the gap – concerns with the IAP's methodology:** In some areas, we have described our concerns about the assessment basis, which could explain the gap between the IAP and our plan.



Section 2

Outcomes

A Introduction

- 2.1 This Section outlines our approach to setting stretching Performance Commitments (PCs) and Outcome Delivery Incentives (ODIs) that aim to fulfil our customers' requirements, as initially described in our Business Plan; as well as the additional challenge we have decided to take in response to Ofwat's Initial Assessment of Business Plans (IAP). We discuss:
- **Section B:** Our September Business Plan;
 - **Section C:** Ofwat's IAP;
 - **Section D:** Additional stretch in our April Submission;
 - **Section E:** Additional delivery risk; and
 - **Section F:** Explaining the gap – concerns with the IAP's methodology; and
 - **Section G** summarises.
- 2.2 This Section should be read in conjunction with our completed Ofwat Action Tracker⁵ and the Outcomes supporting evidence document⁶, which contain detailed responses to the Required Actions on the IAP Outcomes test area, as well as further supporting evidence to compliment this Section.

B Our September Business Plan

- 2.3 Our September Business Plan was the product of an industry-leading research programme. Customers took part in a well informed discussion to help co-create the Business Plan, an approach which is now established as an integral part of the ongoing operation of our business. As part of our engagement process, all of our 15 million customers had the opportunity to shape our plan, and 984,000 actively participated in the engagement process. This included individuals, commuters, businesses, developers, market retailers, customers in vulnerable circumstances and young customers who will become tomorrow's bill payers.

⁵ TW-RS2: Ofwat Action Tracker.

⁶ TW-OC-A1 Outcomes Supporting Evidence.



- 2.4 Our engagement and outcomes development process prior to our September Business Plan included:
- **A foundation stage:** A series of deliberative workshops with customers;
 - **Phase 1:** We set our outcomes and distilled what customers wanted into 42 key messages;
 - **Phase 2:** The development and testing of PCs with customers and their willingness to pay for service improvements; and
 - **Phase 3:** Acceptability testing and finalisation of the plan.
- 2.5 In Phase 1, we developed a report entitled What Customers Want⁷ to collate our research findings. This included gathering insight on each of the 42 key messages, covering a broad range of issues, such as: i) maintaining the system to ensure it is reliable; ii) supporting customers who suffer sewer flooding; iii) providing water at good pressure; and iv) meeting the needs of customers in vulnerable circumstances. We continue to update this report as this Periodic Review progresses and we gather further customer insight.
- 2.6 We developed a total of 53 PCs based on a series of 'driver trees' linked to our 5 outcomes and designed to ensure full coverage of what customers want. In Phase 2, we conducted further research to help us to assess the value of our services to customers, wider society and the environment. We submitted a detailed triangulation report explaining how this insight was brought together to a single set of customer values.
- 2.7 For each PC, we created an individual Summary Report⁸ that explains in detail how we translated our customer research into a committed performance level and incentives. Each Summary Report describes how:
- Our PCs were designed such that our customers could understand them;
 - The associated targets were sufficiently stretching;
 - The type of incentive was appropriate for each measure (e.g. whether it was reputational, penalty-only or reward and penalty); and
 - Features such as caps and collars and incentive rates reflect customers' views, as well as the extent and timing of any impact on bills.
- 2.8 For the industry Common Performance Commitments (CPCs) our September Business Plan committed to the following:
- **Leakage:** A 15% reduction from our 2019/20 target;
 - **Bursts:** Stable performance, despite increasing the number of proactive repairs to leaking mains needed to hit the leakage target (a proactively repaired main must be reported as a burst) and an ageing network;
 - **Supply interruptions:** A 5.6% improvement, also against the backdrop of more proactive mains repairs to hit leakage, many of which will result in planned interruptions to customers' supplies;
 - **Sewer Collapses:** Continued industry-leading low levels;
 - **Sewer flooding:** A 15% reduction to the lowest levels that we have ever achieved;
 - **Pollution:** A 30% reduction compared to 2016 levels and equivalent to 4 stars in the Environment Agency's annual Environmental Performance Assessment; and
 - **Sewage treatment and water quality:** Targeted at full statutory compliance.

⁷ TW-CSE-A1: What Customers Want v 13 (Final).

⁸ CSD005 Performance Commitment Summaries (September 2018).



- 2.9 We also committed to provide significantly more support for customers in vulnerable circumstances, increasing our priority services register to 400,000 households and the number of households receiving financial support to 200,000.
- 2.10 Our September plan resulted in an overall ODI range of +0.47% / -1.53%. Supplementary research that we conducted in January 2019 shows that customers preferred our range when presented with industry comparative information⁹.
- 2.11 Phase 3 included acceptability and affordability testing. In September, 67% of our customers agreed that our AMP7 plan was acceptable, and 68% that it was affordable. Customers were less supportive of our AMP8 plans: just 60% regarded our September plans as acceptable and affordable¹⁰.
- 2.12 We believe firmly that our September Business Plan had a clear line of sight back to research findings and what customers want. With respect to our water service, the challenge of reducing and holding leakage at the lowest levels we have ever achieved, while operating the oldest and most fragile and frequently bursting network in the industry, cannot be under-estimated. For wastewater services, our September Business Plan reflected our best view of upper quartile performance at that time. Our retail plan offered a true step-change in protection for vulnerable customers.

C Ofwat's IAP

- 2.13 We welcome the fact that Ofwat considered that our September Business Plan provided evidence of a high-quality approach in some specific areas, particularly in our approach for performance reporting structures and adopting in-period ODIs by default.
- 2.14 However, in the 'Delivering Outcomes for Customers' test area, Ofwat considered the IAP test area grade to be a 'C'. Overall, we were disappointed with this assessment and the feedback that Ofwat's IAP provided. The IAP considered that the key areas where our September Business Plan fell short of high quality included:
- **Insufficient stretch:** For leakage, per capita consumption, supply interruptions PCs (and in the detailed feedback - internal sewer flooding and pollution);
 - **Insufficient evidence:** Concerning:
 - The deterioration in asset health measured by the level of mains repairs;
 - ODI rates for PCs provide adequate performance incentives, specifically for leakage and internal sewer flooding;
 - Scaling factors used in the Business Plan;
 - **Insufficient balance:** Our overall package was not considered balanced. For example, Ofwat considered that the largest financial incentives did not always reflect customers' highest priorities; and
 - **Insufficient protection from outperformance:** Ofwat was concerned to understand how we would protect customers if outperformance payments outturn higher than expected.

⁹ TW-CSE-A1: What Customers Want v 13 (Final).

¹⁰ CSD002-PR19: What Customers Want, Consolidated Report, September 2018.



- 2.15 We have reflected on Ofwat's feedback and industry business plans in this April Submission. Individual PC Summaries and accompanying technical documents submitted alongside the April Submission provide evidence in response to these challenges. There are a total of 92 PC specific actions listed in the IAP, which we have responded to substantively in Ofwat's Action Tracker¹¹ and in our Outcomes supporting evidence document¹².

D Additional stretch in our April Submission

- 2.16 We have listened to the challenges to our PCs and ODIs in Ofwat's IAP and from our customers, and we want to respond positively to the following specific PCs and ODIs, that are of particular concern:
- **Wastewater measures:** Pollutions and internal sewer flooding; and
 - **Water measures:** Leakage, supply interruptions and per capita consumption.
- 2.17 We have focussed on these PCs in particular, because our research shows clearly that customers show the strongest preferences towards improving service in these areas. We also acknowledge that Ofwat has set an expectation that companies should achieve upper quartile performance for supply interruptions, pollution and internal sewer flooding; and that we should consider additional stretch for leakage and per capita consumption (PCC) given that our current performance is lower quartile.
- 2.18 We have not included any additional costs for achieving these stretch targets in our resubmitted plan. Additional costs are presented as additional risks in Section E below.
- 2.19 In this section, we also provide explanation and justification for:
- D i) Supplementary customer research;
 - D ii) Wastewater measures: Pollutions and internal sewer flooding;
 - D iii) Water measures: Leakage, supply interruptions and per capita consumption.
 - D iv) Addition and removal of PCs; and
 - D v) Our revised ODI RORE range.

D i) Supplementary customer research

- 2.20 Prior to receiving the IAP feedback on 31st January 2019, we had already initiated a programme of supplementary customer research. The purpose of this was to re-test some aspects of our Business Plan including: where customers had mixed views in our 2018 research; outstanding challenges from our CCG; and potential changes to our ODI package.

¹¹ TW-RS2: Ofwat Action Tracker.

¹² TW-OC-A1: Outcomes Supporting Evidence.



- 2.21 Full details of the research and our approach can be found in our PC and ODI Appendix¹³. In summary, we focussed upon:
- Mains bursts target;
 - Supply interruptions interruption rate;
 - PCC incentives;
 - Incentives to deal with future issues and uncertainties;
 - ODI RORE range compared with other companies; and
 - Enhanced incentive rates.
- 2.22 Given the earlier customer research, this latest research was not a first principles re-test of all our PCs and ODIs. It was important to build on previous findings, recognising that customers have already provided valuable insights around these key subjects.
- 2.23 The sample sizes of the focus groups that were organised, although representative of our customer base, were not large enough to be considered as statistically significant. Nevertheless, we consider that the feedback provides us with a good indication of customer views, as well as the strength of feeling on the questions that were posed:
- **Mains bursts target:** In June 2018, customers had mixed views as to whether our stable mains burst target was stretching. We explained in more detail the relationship between our leakage target and mains bursts using show cards. Most customers subsequently understood this relationship and 67% of respondents accepted a stable target in the short-term. However, customers' expectations in the long-term are that bursts will reduce, as work on replacing the network is completed. Those customers that disagreed were concerned about Thames Water already being in the bottom 25% of water companies;
 - **Supply interruptions incentive rate:** Customers thought that Thames Water could be more ambitious in its supply interruptions targets. However, 24 out of 34 (71%) respondents did not agree that Thames Water should amend the business plan target for supply interruptions as far as the Ofwat proposed IAP upper quartile target. 10 out of 34 (29%) respondents agreed. This was to avoid too much focus being placed on this area of service to the detriment of others. Customers would rather Thames Water maintains its proposed incentive rate put forward in its plan – instead of adjusting it to be more in line with Ofwat's views. 24 out of 33 (73%) respondents rejected amending the incentive rate to fall within the range proposed by Ofwat – preferring to keep the Thames Water proposed target and associated incentive rates;
 - **PCC incentives:** 88% of respondents thought that Thames Water and its customers should not be rewarded or penalised for reductions in PCC delivered by other organisations and government policies. 4% of respondents thought that Thames Water should be responsible for the whole target, and to make up for gaps in PCC delivered by Government and other organisations, given that it is difficult to isolate the effect of different campaigns;
 - **Incentives to deal with future issues and uncertainties:** An ODI mechanism to log up and down for population growth should be in place (although not needed as a PC), and ODIs should encourage quicker delivery of the North East London Resilience scheme;

¹³ TW-CSE-A3: CR70a-PCs and ODIs 2019.



- **ODI RORE range compared with other companies:** 53% of respondents thought the ODI bill impact range proposed by Thames Water should stay broadly the same, seeing it as a fair balance between outperformance incentives and the potential increase on bills. Whereas, 44% of respondents indicated that the range should be amended. When comparing the ranges of all WASCs – Thames Water was most preferred; and
- **Enhanced incentive rates:** There was support for (capped) enhanced rates - improving all companies in a balanced way. This support is conditional on shared information being genuinely useful, and the avoidance of undue focus on some aspects of service to the detriment of others. There was broad support for Thames Water to pursue enhanced rates for areas where we are currently performing well, namely reducing pollution incidents and the health of the sewer network. As well as enhanced rates for outperformance, customers want to see sufficient penalties in the framework.

2.24 Following changes to bill profiles and service levels, we have seen continued strong customer support for our plan: a large and increased majority of our customers find the AMP7 plan acceptable (87%) and affordable (81%)¹⁴. Customers also find our AMP8 plan to be acceptable (86%) and affordable (84%)¹⁵. This compares favourably to the testing of our September Business Plan, where customers found our AMP7 plan to be acceptable (67%) and affordable (68%); while our AMP8 was found to be acceptable (60%) and affordable (60%).

D ii) Wastewater measures: Pollution and internal sewer flooding

2.25 Our current performance in AMP6 for pollution is close to upper quartile, while we are close to the mean average for internal sewer flooding. The underlying asset health of the wastewater system is good – we are a frontier company on sewer collapses. However, we want to stretch our performance for the sake of our customers, as we describe below.

Pollution

2.26 Our September Business Plan set a stretching target of achieving 23 incidents per 10,000km of sewer by 2024/25. We are now proposing to meet the upper quartile profile set by Ofwat in the IAP, stretching our performance from 28 incidents per 10,000km in 2018/19 to 19.5 incidents per 10,000km of sewer by 2024/25. We have chosen to improve our ambition to this level because:

- Reducing pollution is valued highly by customers and by our key stakeholders;
- The target of 19.5 incidents per 10,000km by 2024/25 meets the Water Industry Strategic Environmental Requirements (WISER) condition of a 40% reduction from the 2016 calendar year performance;
- We have progressed an innovative new approach to pollution reduction since September, using low-cost loggers and machine learning from alarms. As a result, we are able to stretch performance while keeping the additional costs incurred broadly in line with customers' willingness to pay; however

¹⁴ TW-CSE-A3: CR71 Final Acceptability Testing 2019.

¹⁵ TW-CSE-A3: CR71 Final Acceptability Testing 2019.



- Our new approach is as yet untested and reverting to *conventional* approaches to reduce pollution, such as sewer cleaning, sewer rehabilitation and customer education (including our 'bin it don't block it' campaign) would be prohibitively expensive.

Internal sewer flooding

2.27 Our September Business Plan envisaged reducing the annual number of incidents from 1,244 in 2019/20 to 1,052 by 2024/25. We are now proposing to achieve a 20% reduction in incidents (995 incidents by 2024/25). We have chosen to improve our ambition to this level and not to the upper quartile profile set out in the IAP (for Thames Water equivalent to 848 incidents by 2024/25), because:

- Reducing internal sewer flooding incidents is valued highly by customers;
- We are able to apply the same innovative new approach as for pollution, using low-cost loggers in combination with machine learning from alarms to proactively deploy gangs to clear potential blockage build-ups, before internal flooding occurs. As a result, we are able stretch performance while keeping the additional costs incurred broadly in line with customers' willingness to pay;
- Moving to upper quartile would require approximately a 50% reduction in internal *other causes* flooding, compared to our current performance. Our research shows that customers would not be willing to pay for such a service improvement (estimated to cost in excess of £200m on top of our revised AMP7 totex forecast). Nor do we believe that any programme would be deliverable within the 5-year period. We are forecasting to exceed Ofwat's 2024/25 IAP upper quartile view by mid AMP8; and
- As with pollution, our revised proposal for sewer flooding presents a significant risk to our operation and our innovative new approach has yet to be proven in practice.

D iii) Water measures: Leakage, supply interruptions and per capita consumption

2.28 We have the oldest water network in the industry with the highest burst rate and at times, it is not resilient to weather events such as freeze thaw. The underlying asset health must be taken into consideration when assessing the level of realistic stretch to service enhancements in AMP7. However, we want to focus our efforts on customer priorities, as described below.

Leakage

2.29 We are employing significant effort to reach our target of 606MI/d by March 2020. Through a combination of innovation, effort and understanding, we are working harder than ever to reduce leakage. Compared with our position in 2016/17, we are now finding more leaks (estimated 40% increase in volumes detected) and fixing more leaks (17% increase in visible leaks fixed, and 50% more hidden leaks fixed), reducing backlogs (leaks over 50 days' old cut by 76%, average age of backlog leaks cut by 30%), speeding up repair times (average age of completion reduced by 30%) and improving our use of assets and data (26,000 new acoustic loggers in place). However, despite our strenuous efforts to improve, there has been a frustrating disconnect between our efforts and our results, with overall leakage levels not reducing as we had expected.



- 2.30 Our performance in 2018/19 has been heavily affected by two challenging weather events: the extreme cold weather in March 2018 – the *Beast from the East*; and the hot, dry weather between April and July 2018. Both have contributed to increases in leakage and we have struggled to recover our performance sufficiently to keep our original forecasts of 2019 year-end value and our 2019/20 average leakage level. Our current best view is that we have ended the year on 31 March 2019 at c.663MI/d, which is c.30MI/d higher than our previous forecast of 633MI/d.
- 2.31 This means we begin 2019/20 at a higher level of leakage than we had expected to, which has a knock-on effect on our ability to reduce leakage during the year. We will continue our efforts to achieve our annual average leakage target in 2019/20 of 606MI/d, but from the experience of the past year, our risk adjusted forecast is 636MI/d. This will still surpass our best ever leakage reduction performance.
- 2.32 We are maintaining our leakage target as an annual average, and prior to leakage consistency methodology changes, at 509MI/d by 2024/25. This means increasing our efforts in our recovery plan, such that the overall leakage reduction in AMP7 will be equivalent to 20% from our current 2019/20 forecast level. The key activities we will undertake in AMP7 are:
- **Customer side leakage:** Currently 28% of leakage is on private pipes on our customers' land. By continuing the roll out of our progressive metering programme, and the installation of bulk meters on blocks of flats, we will have much better ability to target this leakage (and wastage in customers' properties); and
 - **District Metered Area Enhancement:** We have close to 1700 District Metered Areas (DMAs) across our region, splitting our network into smaller areas that allow a balance to be calculated between water delivered and water used. The difference between the two can be leakage or high usage by our customers. By improving our understanding of the targeted DMAs, adding further monitoring equipment, including acoustic loggers and installing progressive meters we can greatly improve our targeting of leakage and usage.
- 2.33 The above two activities will deliver the majority of the reduction in AMP7 (2020-2025) and AMP8 (2025-2030). Once the metering programme is complete and the targeted DMAs are enhanced, the benefit from these activities will decrease. The benefit of other cost-effective options (such as pressure management) will also have been realised at this time.
- 2.34 Therefore, we are left with mains rehabilitation as the only realistic option to improve asset health and to reduce leakage further in AMP7. While mains rehabilitation is a longer term and high benefit option, reducing leakage, bursts, interruptions to supply and potentially improving water quality, it is currently by far the most expensive option.
- 2.35 We expect that our plans for additional metering and DMA enhancement will improve our understanding of the best areas to target for mains rehabilitation and leakage reduction. The cost benefit of mains rehabilitation will then improve, allowing us to achieve our long-term ambition of a 50% reduction.

Supply interruptions

- 2.36 Our September Business Plan proposed a 5.6% improvement from 10 minutes, 35 seconds per property in 2019/20, to 9 minutes, 59 seconds per property by 2024/25. We now propose to improve our performance to 8 minutes, 30 seconds per property by 2024/25. This represents a significant 20% reduction over AMP7.



- 2.37 We have chosen this stretching level of service, but not to adopt Ofwat's IAP upper quartile profile of 3 minutes per property by 2024/25, because:
- Following the industrywide targeted review of CPCs conducted earlier in 2018, we have serious concerns about the extent to which reliable comparisons can be drawn between companies;
 - We have invested in extensive pressure monitoring in our network. In accordance with best practice, our approach assumes customers to have been impacted by a supply interruption when our modelled view of pressure outside their property falls below the requisite level. In other words, we do not specifically rely on a customer having to contact us to inform us that their supply has been interrupted. We understand that other companies rely solely on customer contacts, which in our view will substantially under-report the number of customers affected by an incident. We consider that the different approaches used by companies make company comparisons difficult and potentially misleading;
 - Since September, we have identified some operational improvements that could be made, to improve performance. These include: enhanced maintenance of trunk mains valves so that areas of the network can be isolated more expediently following a burst; more flexible approach to field staff shift patterns to ensure better staff coverage at times in the day when major supply interruptions are more likely (in London - typically early in the morning); better equipping of field teams with pump spares to put customers back in supply quicker; and more forensic root cause analysis to ensure better operational learning; and
 - While these operational improvements offer a forecast step-change in performance, they cannot be scaled up to achieve the upper quartile levels of service that Ofwat has identified in the IAP.
- 2.38 To achieve our proposed service enhancement, we plan to roll-out CALM network technology. The approach is to place less stress and strain on our fragile network, when we have to move water around quickly to meet customers' demand. We will do this through improved pressure management and by starting and stopping pumps in a much 'softer' way using variable speed drives so as not to create pressure transients in the network (also known as 'water hammer').
- 2.39 Further enhancements to the upper quartile levels that Ofwat has identified in the IAP would require the asset health of our water network to improve significantly. In other words, upper quartile performance is only realistic from a notional company that has had the benefit of a much newer network with very low burst rates. For Thames Water, achieving (and exceeding) this level of performance will fundamentally be linked to our 30 year ambition to replumb London and more generally address the age of our networks.
- 2.40 In our most recent research conducted in February 2019, customers did not support moving to Ofwat's IAP upper quartile profile. They felt that the difference between our current performance and upper quartile profile was unrealistically large and would result in us placing too much focus on improving this service area to the detriment of others¹⁶. We are concerned because an unrealistic target can hinder customer confidence in the company performance and make it harder to engage with customers around behaviour change initiatives such as PCC reduction and reporting leaks.

¹⁶ TW-CSE-A1: What Customers Want v 13 (Final).



- 2.41 In conclusion, we are proposing a stretching target for supply interruptions in AMP7 that will be achieved through a number of operational improvements together with investment in CALM networks. Our revised proposal for supply interruptions represents a significant risk to our operations, as the initiatives that we are proposing have yet to be proven on our network.

PCC

- 2.42 We have also looked carefully at our forecast of PCC. Our September Business Plan forecasted a 4% reduction in PCC from 142 l/hd/day in 2019/20 to 136 l/hd/day on a 3-year rolling average basis by 2024/25. This is consistent with the demand assumptions in our Water Resources Management Plan.

- 2.43 However, we have decided not to change our stretching target, because:

- Moving to a target reduction of (for example) 6% over AMP7 would incur excessive costs that are significantly higher than customers' willingness to pay for the service improvement they would receive. We provided details of these calculations in our September Business Plan¹⁷;
- We forecast that a 6% reduction would require an additional 300,000 progressive meters to be installed followed up by an additional 100,000 Smarter Home visits. Using our AMP6 progressive metering programme as a point of reference, we do not believe that these additional outputs would be deliverable in a 5 year period;
- Further reductions in PCC may be possible in the future, once smart meter penetration increases across our region and we are able to introduce innovative tariffs to influence customer behaviour. In other words, benefits in the short-term do not outweigh the higher short-term costs; and
- We have presented comparative information on PCC performance to customers and they accepted that it might take a while to deliver benefits until smart meter penetration increases.

D iv) Addition and removal of PCs

- 2.44 We have added 3 new PCs in our April Submission, with the full support of our CCG, in response to the IAP and customer feedback. Further detail of these new PCs is provided in their associated detailed PC documents:

- DWS03 Strategic Regional Solution development¹⁸;
- AR06 Priority Service Register¹⁹; and
- AR07 BSI for fair, flexible inclusive services²⁰.

- 2.45 We have removed a total of 8 PCs from our April Submission, with the full support of our CCG. Many of the PCs are being removed to avoid duplication, as they are being replaced by two of the measures above; while others are being removed given the lack of customer support.

¹⁷ CSD005: Per Capita Consumption Performance Commitment Summary (September 2018).

¹⁸ TW-OC-A1: Outcomes Supporting Evidence, section 2, para 2.5.

¹⁹ TW-OC-A4: Priority Services Register PC.

²⁰ TW-OC-A3: Vulnerability BSI PC.



2.46 Details are provided in our outcomes supporting evidence document²¹.

D v) ODIs and RORE range

2.47 In this section, we describe how we have applied the latest customer insight to our ODI resubmission and addressed Ofwat's IAP challenges, within the following items:

- ODI incentive rates;
- Risk profiles;
- Collars, caps and deadbands;
- TTT penalties; and
- Reputational ODIs converted to financial ODIs.

2.48 We note that in the IAP, Ofwat has calculated an ODI rate 'corridor' from industry data using an arithmetic mean +/- 0.5 standard deviations for service related CPCs, and upper quartile for common asset health PCs. We accept that industry incentive rates should be within a broad corridor, although it is important that they remain consistent with company's own customer valuations. By selecting from within the range of our customer valuations, we have been able to bring our incentive rates within the benchmarking corridor. However, we do not agree with using an upper quartile incentive rate for asset health measures because it is important that companies can stay within the range of their customer valuations and therefore need the scope provided by a benchmarking corridor. In addition, we consider that our asset health incentive rates already provide appropriate incentives to invest in asset health, with over £150m of ODI exposure at the P10 level.

2.49 While we have used Ofwat's ODI analysis as a point of reference, any changes that we have made are still linked to the customer research and valuations that we have obtained and continued use of Ofwat's ODI formulae wherever possible.

2.50 Our resubmitted ODI package our financial PCs that have been changed is reported in the Outcomes Appendix²². When applied to the RORE scenarios²³, our overall ODI RORE range moves from our September Business Plan of +0.47% to -1.53% and is now +0.83% to -1.53% in our April Submission.

ODI incentive rates

2.51 The key changes to the ODI incentive rates in our April Submission are:

- We have recalibrated our ODIs for supply interruptions, pollution and sewer flooding, to reflect the more stretching targets that we are now proposing;
- We have recalibrated our leakage ODI to reflect our updated position; and

²¹ TW-OC-A1: Outcomes Supporting Evidence.

²² TW-OC-A1: Outcomes Supporting Evidence.

²³ TW-RR-A2: Finance and Financeability.



- We have recalculated our PCC incentive rate, removing the benefit delivered by other organisations that not related to our plan (i.e. water efficient white goods), in line with customer views on this described at the beginning of this section.
- 2.52 In our September Business Plan, we proposed separate ODI rates for Ofwat's Common PC for Water Quality Compliance Risk Index (CRI) – CRI other and CRI Metaldehyde. We have continued to adopt this approach in our Submission. We have not adopted a single ODI rate for CRI because it is likely that Metaldehyde will continue to be used for a while after the ban as stocks are used up and its impact, if we had a single ODI rate, would be disproportionate. We have removed the totex from our plan associated with managing Metaldehyde levels on this basis.
- 2.53 However, we believe firmly that Metaldehyde will still be detected in raw water following heavy rainfall, for a significant time after any ban comes into effect. This is because Metaldehyde is likely to be stockpiled within the farming community as we approach the ban. Therefore, we believe that it will many years until Metaldehyde levels eventually recede.
- 2.54 For the Unplanned Outage Common PC, we continue to report this as a Financial ODI. However, we note that following the recent Water UK study, further work is needed both in terms of fully defining this measure, as well as improvements to companies' processes to report on this metric accurately. Given the relative immaturity of this important measure of Asset Health, we remain to be convinced that a financial ODI is appropriate and would welcome further dialogue with Ofwat, as the Price Review progresses to the next stage.

Risk profiles

- 2.55 The P10/P90 risk profiles around our PC targets have been recalculated for key PCs, including leakage, blockages, mains bursts and treatment works compliance. We have used latest performance data to recalculate the distribution.

Collars, caps and deadbands

- 2.56 We have reviewed key collars, caps and deadbands in response to Ofwat's IAP challenge, as well as the action required to protect customers from excessive outperformance payments. We propose to do this by:
- Agreeing to a sharing mechanism to protect customers, with customers sharing (50:50) for RORE returns over AMP7 >3%; and
 - Applying individual reward caps to PCs, such that no single measure exceeds 0.25% RORE (approximately £15m) in any one year.

TTT penalties

- 2.57 We acknowledge Ofwat's concern to have PCs that cover the Thames Tideway Tunnel (TTT), given that this programme has its own price control. However, we note that customer research shows that customers do not consider that TTT PCs are necessary and that the definitions are difficult for them to understand. They consider that we should just be 'getting on with it'.
- 2.58 We accept that some of the projects in the TTT price control, while comparatively low in value compared to the rest of our plan, have the potential to delay the delivery of the TTT if they are not completed on time.



- 2.59 Therefore, we propose to increase the magnitude of our incentives for delivery. We have increased the potential penalties for the timely sale of land as it is released and for delays in establishing a system operator to £30m in total. We have also proposed rewards, of up to £30m, to provide a balanced package of incentives so that this major project to improve the quality of the river is delivered on time.
- 2.60 We also propose to increase our performance commitment from a score of 3.5 to 4.0 for ET02 effective stakeholder engagement, but the measure will remain as a non-financial ODI.

Reputational ODIs converted to financial ODIs

- 2.61 We have converted a number of reputational ODIs to financial ODIs, in response to the IAP Delivering Outcomes for Customer test area. The following PCs are now financial and ODIs have been calculated using a marginal cost approach:
- Unregistered household properties;
 - Empty household properties; and
 - Empty business properties.

E Additional delivery risk

- 2.62 The additional stretch that we are proposing for pollution, internal sewer flooding, leakage and supply interruptions will also come at a cost to us to deliver. However, as noted at the beginning of this chapter, these additional costs have not been included in our AMP7 totex forecast.
- 2.63 We estimate the additional stretch of achieving a revised stretch PCs to be as follows:
- **Leakage:** The additional cost of recovering approximately 30 MI/d in AMP7, (based on the current forecast for 2019/20) is forecast to be £42m;
 - **Supply Interruptions:** The additional cost of achieving the revised 20% reduction to 8.5 minutes is forecast to be £27m during AMP7. This includes enhanced maintenance of trunk mains valves, so that areas of the network can be isolated more expediently following a burst; a more flexible approach to field staff shift patterns to ensure better staff coverage at times in the day when major supply interruptions are more likely (in London - typically early in the morning); better equipping of field teams with pump spares to put customers back in supply quicker; and more forensic root cause analysis to ensure better operational learning;
 - **Pollution:** The additional cost of achieving the revised stretch target of 19.5 incidents per 10,000km of sewer is forecast to be £50m during AMP7, using conventional techniques. This includes an additional 2,160 conventional sewer depth monitors; an extra 1,254km of sewer cleaning; an extra 80km of sewer rehabilitation activity; and an extra 6,000 direct customer contacts for 'bin it don't block it'; and
 - **Internal Sewer Flooding:** The additional costs – above and beyond those set out for pollution above – of achieving the revised stretch target of 995 incidents by 2024/25 is forecast to be £70m during AMP7, using conventional techniques. This includes: an additional 2,520 conventional sewer depth monitors; an extra 1,617km of sewer cleaning; an extra 117km of sewer rehabilitation activity; and an extra 8,500 direct customer contacts for 'bin it don't block it'.



- 2.64 This April Submission features a significantly greater stretch for key PCs over AMP7, compared with our September Business Plan. This stretch implies a higher cost, at over £189m – for which we will not receive additional allowances, within the PR19 price control, given the cost challenge from Ofwat's IAP. This presents a substantial challenge. While this April Submission forms a coherent plan, the additional outcomes, together with the additional cost challenge creates an additional delivery risk for Thames Water during AMP7.

F Explaining the gap – concerns with the IAP's methodology

- 2.65 We have listened to the IAP's feedback and responded with a further stretching package of measures that have significantly extended our performance commitments – at increased delivery risk. We recognise that there are gaps between our April Submission and Ofwat's IAP modelling results for PCs and the ODI range. However, we have some concerns with the IAP's methodology, which may explain the differences:

- F i)** Our concerns about Ofwat's treatment of asset health in setting stretching PCs;
- F ii)** Differing feedback received on ODI RORE ranges; and
- F iii)** Our views on the latest C-Mex and D-Mex guidance.

F i) Our concerns about Ofwat's treatment of asset health in setting stretching PCs

- 2.66 We inherited the oldest water and wastewater networks in the industry. The IAP expects us to improve services to customers to an upper quartile level, regardless of the age or condition of the assets.
- 2.67 Ofwat's new expectations do not account for the current condition of our assets. Since privatisation, companies have balanced service performance with affordability. With the backing of customers, Thames Water has prioritised affordability and has one of the lowest bills in the industry (while maintaining asset health). This means that our average household bill is better than the industry upper quartile; this is not acknowledged in Ofwat's IAP feedback.
- 2.68 We fully support Ofwat's desire to see improving services for customers. The PR19 IAP's expectations for PCs and cost allowances are based on upper quartile performance and hence these expectations require investment in our assets. However, the IAP's models do not allow for the costs of asset performance improvement or a transition period.
- 2.69 Our plans have been based on the need to invest in our operation. Our asset base is approaching the phase where investment is needed to deliver the performance and resilience in the future that our customers want. We would be concerned if allowances were not granted to start this investment, particularly as: i) this is a good time to invest, with lower interest rates; and ii) delaying such investment would risk asset degradation, implying higher price pressure on future customers.
- 2.70 Therefore, we believe that part of the gap between our plans and the IAP can be explained by the expectation that all companies' assets are in the same condition. We ask Ofwat to consider granting cost allowances to pay for asset health investment, as well as a transition period, within its draft determination.



C ii) Differing feedback received on ODI RORE ranges

- 2.71 This section summarises our concerns about the differing feedback on ODIs in the 'Delivering Outcomes for Customers' and 'Aligning Risk and Return' IAP test areas. There is a significant amount of challenge and many Required Actions in the Outcomes test area - particularly where we have proposed outperformance payments. Conversely, IAP feedback in the Aligning Risk and Return test area questions why our plan is weighted towards underperformance.
- 2.72 We believe that this differing feedback explains the gap between our September Business Plan and Ofwat's IAP.
- 2.73 In setting our ODI RORE range, we have followed the Ofwat formulae in almost all cases. Outperformance rates are lower than underperformance rates, because the outperformance formula uses the delta between marginal benefits and costs, whereas the underperformance formula uses marginal costs only.
- 2.74 We have carried out detailed uncertainty modelling to understand the P10 / P90 distribution around PCs, where we have appropriate historical datasets. In many cases the distributions have a long tail towards underperformance. For example, for supply interruptions, our P90 view is many times greater than our central P50 view, because of the geography of London and numbers of properties that could potentially be affected if we have a major burst etc. Conversely, our P10 view of potential outperformance, is much closer to our P50 view.
- 2.75 The combination of applying Ofwat's standard ODI formulae to PCs with long tails towards underperformance leads to an ODI RORE range with more downside risk than upside reward.
- 2.76 However, in the Risk and Return IAP test area, Ofwat states:
- "...while there is high quality and convincing evidence in the company's assessment of risk for the notional company in its RoRE analysis in the round, we have concerns that the company's presentation of likely totex outcomes is weighted towards underperformance on a notional basis"²⁴.*
- 2.77 Given the full package of risk and return contained within Ofwat's PR19 methodology, it would seem appropriate to us for the ODI RORE range to be largely symmetrical - particularly given the totex that we have removed from our resubmitted plan that we describe in Section 2 on Costs.
- 2.78 In recalibrating our overall ODI package, we have chosen to re-engage with customers, seeking their views on a top-down distribution, rather than on individual PCs. We believe that these actions should both fulfil customer requirements and meet Ofwat's expectations.

C iv) Our views on the latest C-Mex and D-Mex guidance

- 2.79 We have found it particularly challenging to develop our plans for AMP7, given that the methodology and current process for setting C-MeX and D-MeX, the two key measures of customer experience have not yet been finalised by Ofwat. In this Section, we outline our concern with the methodology, as far as this has been finalised, as well as the current process for establishing the metrics.

²⁴ Ofwat. Thames Water test area assessment, aligning risk and return, page 4.



C-MeX

- 2.80 We are committed to improving our service to our customers – and demonstrating tangible improvement in our performance. We have been involved actively in the development of Ofwat's C-MeX metric, within the industry working group. We recognise that Ofwat has taken on board a number of points that we have shared within the working group. Importantly for Thames Water, this includes the addition of the NPS metric, within the overall methodology.
- 2.81 However, based on the shadow year and policy decisions published on 8 March, we still have a number of concerns with both the metric methodology and its implementation - based on the intended guiding principles of the working group, for the metric to be: simple, fair and robust:

- **Relative scoring is fundamentally unfair as it fails to recognise improvements in performance, or relative differences between companies, or customers' expectations:** C-MeX penalties and rewards are not sensitive to absolute improvement in service; but rather, to the distribution of companies, relative to each other. We are concerned that significant rewards and penalties apply to companies based on small differences in performance. This means that rewards will always be paid to the best companies (even if no improvement happens) and penalties will always be paid by the worst companies (even where there is significant improvement).

Specifically, based on the current C-MeX design, we are very concerned that we would still suffer c.£20m in penalties across AMP7, even if we significantly improved our performance to 5th place in the country in the C-MeX rankings over AMP7. While we are committed to improving our service to our customers, the relative scoring within C-MeX, as proposed, appears to be unreasonable because it fails to recognise marked improvement appropriately.

Also the relative reward / penalty structure does not take into account what customers are willing to pay for or expect. This creates an unfair system in which incentives are not related to the benefit generated for customers, but related to effort needed to stay ahead of the pack. We ask Ofwat to consider a metric based on the absolute improvement of each company;

- **Metric results are not comparable:** Each company faces different challenges relating to the specific needs, challenges, priorities and customers of the region it serves; most of which are outside its control. However, the current C-MeX metric does not control for such differences, (e.g. through weighting). This means that the metric result is not comparable. Specifically, we have presented results to Ofwat that demonstrate that different social-demographic groups derive different scores²⁵. Each company will have a unique distribution of socio-demographic groups – but will have rewards/penalties determined by relative scores. This means that comparable performance in different parts of the country will result in different scores, purely because of differences in the distribution of socio-demographic groups. Given this natural bias, we ask Ofwat to consider how weighting the sample could control for this bias (e.g. using a national distribution of socio-demographic groups to determine the sample). Given the relative scoring, where rewards and penalties are paid given the relative position of the metric results, the financial impact of C-MeX is unfair. We ask Ofwat to consider and share comparability evidence collected during the shadow year to derive appropriate weighting;

²⁵ TW-CE-A28: Future of the Water Sector-Service Incentive Mechanism.



- **Survey characteristics are not yet robust enough to justify significant rewards/penalties:** There has been a significant narrowing in the range of performance with SIM and the wave 1 and 2 C-MeX results showing a relatively narrow range of performance. Given the importance of the relative score within the distribution of companies, it is important for the sampling to be a fair and unbiased representation of customers within our region. However, we are concerned that the proposed sample size is not representative and is potentially too small. It is important that the range is linked to how the penalty and rewards are calculated, so that companies are not rewarded or penalised based on inappropriate confidence intervals; and
- **Use of the Net Promoter Score (NPS) question:** NPS is the metric that we will be using as a business metric and we support the use of it as part of the C-MeX metric, due to the comparability to other industries with the NPS score. This would also simplify the C-MeX metric. We ask Ofwat to re-consider using the NPS further, within the Customer Experience metric – rather than using the CSAT question.

2.82 Given the importance of achieving improvements for our customers, we have decided to develop an additional performance commitment and financial ODI to demonstrate the relative improvement of our service over time. In developing this metric, we will test with customers the appropriate level of performance that should receive a reward and/or penalty. This is important, because C-MeX does not take into account what customers expect or are willing to pay for. This is a critical success factor for our business in order to demonstrate tangible improvements in customer outcomes and to recognise employees that are working hard to deliver service improvements.

2.83 We will be in a position to share our proposed additional performance commitment before the Draft Determination. In the meantime, significant review of the data and results of the shadow year C-MeX methodology is required and we will continue to contribute to the development of C-MeX to ensure the metric is robust, simple and fair. This includes the weightings to be applied and the online survey correction factor proposed for the shadow year.

D-MeX

2.84 We have been actively involved in the development of the thinking on D-MeX and support the introduction of this measure to drive improved performance for customers of Developer Services. We are pleased that the guidance for the shadow year was published on 8th March and look forward to contributing to the shaping of D-Mex. However, we still have concerns about aspects of the latest draft of the guidance:

- **The significant change in scope:** We are concerned that guidance published on 8th March is far removed from the guidance published to the working group on 14th February. We are concerned that reliance solely on a transactional survey when combined with the low volume of Self-lay and NAV transactions across the industry will under represent these customer segments. This will also lead to a low representation of these customers in most companies' results when it is taken into account that each customer contact can only be surveyed once in any 6 month period. The rationale for removing the relationship survey is that this insight will still be gathered through the transactional survey. However, the proposed question structure narrows feedback to a specific event, rather than the ongoing relationship. Therefore, we are unsure that this will happen in reality;



- **Data Capture requirements:** We welcome the publication of the required data set to support the provision of information to the agent for surveys. We believe that there are a number of points of ambiguity, which we will be seeking clarity on in the coming weeks. We will need to implement system changes to provide fully automated data, and these will be implemented during 2019-20 in preparation for the formal launch of D-MeX in April 2020. The request to provide retrospective segmented customer data by 1st May 2019 will be challenging. It is not clear what benefits this data will add compared to the cost of collating it; and
- **Quantitative Levels of Service:** The proposed method of collating the Water UK metrics into the D-MeX calculation clearly achieves the objective of downplaying the large volume metrics which would otherwise skew company performance. The consequence of this, however, is that undue weighting is placed upon measures with very low volumes. We look forward to working with Water UK to create alternative proposals for July 2019.

2.85 We understand that points for clarification on specific elements are being drafted now and a written response will be required early April to inform our data project. This is also in order for us to achieve the latest data submission timelines without it being unduly burdensome. We are keen to understand when the next working group will be scheduled, to understand why the relationships element has been omitted from the measure, when 4 out of 5 companies requested this remains. We will continue to take an active part in working with the industry throughout shadow year to refine and develop both Levels of Service and the guidance with the aim of reaching a balanced outcome prior to final publication.

Overall

2.86 Currently, we believe there is a significant difference between our hopes for the new customer metrics to be effective in highlighting improvements in customer service, and the detailed methodologies that have been developed. We want to work with Ofwat during the remainder of the PR19 review, to seek to resolve these concerns.

G Summary

2.87 Our September Business Plan was the product of a significant engagement with 984,000 of our customers. However, Ofwat's IAP challenged us to have further ambition for our PCs and ODIs. We listened and responded positively, with further stretching PC targets and an ODI range.

Table 1: Summary of additional stretch in key outcomes

	September Business Plan	April Submission
KEY OUTCOMES		
Pollutions	18% reduction	30% reduction
Internal sewer flooding	15% reduction	20% reduction
Supply interruptions	6% reduction	20% reduction
Leakage	606MI/d to 509MI/d 15% reduction	636MI/d to 509MI/d 20% reduction

Source: Thames Water.



Section 3

Costs

A Introduction

- 3.1 We need to invest in the future of water and waste in London and the Thames Valley, for the sake of current and future customers. Our September Business Plan signalled our desire to upgrade significantly our network infrastructure, while still maintaining the average annual combined household bill unchanged over the next 5 years.
- 3.2 This Section outlines our approach to planning base and enhancement investment costs that aim to fulfil our customers' requirements, as initially described in our September Business Plan; as well as the additional challenge we have decided to take in response to Ofwat's IAP. We discuss:
- **Section B:** Our September Business Plan;
 - **Section C:** Ofwat's IAP;
 - **Section D:** Additional stretch in our April Submission;
 - **Section E:** Additional delivery risk;
 - **Section F:** Explaining the gap – concerns with the IAP's methodology; and
 - **Section G** summarises.

B Our September Business Plan

- 3.3 Our September Business Plan included £11.7bn of expenditure to provide customers with the services they want. This included £5.1bn of base opex, £3.3bn of capital maintenance (considered base cost in our plan) and £3.3bn of enhancement.
- 3.4 Our base costs of £5.1bn allow us to maintain current levels of service. We included significant efficiency in our plan with average base opex per customer (excluding power and business rates) reducing by 13.6% in AMP7 versus AMP6.
- 3.5 We included £3.3bn of capital maintenance to ensure our assets and equipment are maintained and replaced to provide reliability and resilience. This expenditure includes maintaining the health of our pipes and sewers, replacing pumps etc.
- 3.6 Our £3.3bn of enhancement expenditure was targeted at providing the improvement in services and resilience that our customers wanted. This included, for example, £79m on reducing the risk associated with lead pipes, £399m to enhance the treatment capacity of sewage treatment works and £953m on reducing leakage.
- 3.7 The outcomes and associated costs included in our September Business Plan were a coherent package designed to deliver what customers told us they wanted, following extensive customer



engagement, at a price they were willing to pay. The September Business Plan and the impact on customer bills were supported by our CCG, stakeholders and customers.

C Ofwat's IAP

- 3.8 In its IAP, Ofwat raised significant challenges to our September Business Plan, grading the 'Securing cost efficiency' test area as a "D". We were disappointed with this assessment and the feedback provided. The IAP included requests to make material changes, to both common performance measures and our costs, that we consider challenge the coherence of our plan.
- 3.9 Overall the IAP's current assessment is that our efficient totex is £9.4bn compared to our September Business Plan of £11.7bn, a £2.3bn challenge.
- 3.10 Ofwat's IAP assessed the level of base expenditure that we need as a business, based exclusively on top down econometric models built on historical data. Ofwat's models assume that our base costs should be £7.7bn, a £0.7bn (9%) reduction from our plan.
- 3.11 The IAP's assessment of our enhancement expenditure used a mixture of statistical models and deep dives. In addition, Ofwat's IAP also transferred certain costs from enhancement to base, increasing what we classified as base to £8.9bn. This resulted in an increased gap between what we consider to be base and what Ofwat assessed as base of £1.2bn. For enhancement expenditure, without this reclassification, Ofwat assessed efficient enhancement costs to be £1.7bn compared to £3.3bn in our September Business Plan, a 46% reduction. If we take account of the reclassification, Ofwat assessed efficient costs to be £1.7bn against a restated plan of £2.9bn, a 41% reduction.

D Additional stretch in our April Submission

- 3.12 We have listened to the challenge to our projected costs in AMP7 from Ofwat's IAP, and we want to respond positively by taking an additional stretch to our base and enhancement costs. We also recognise the uncertainty inherent in a number of items and propose additional Uncertainty Mechanisms.
- 3.13 We set out below:
 - D i) Summary;
 - D ii) Base cost - additional stretch;
 - D iii) Enhancement cost - additional stretch;
 - D iv) WRMP and Strategic Water Resources;
 - D v) Proposed uncertainty mechanisms; and
 - D vi) Direct procurement for customers.



D i) Summary

3.14 We consider that we have a plan that is even more efficient, but still allows us to deliver for customers. In summary, we have:

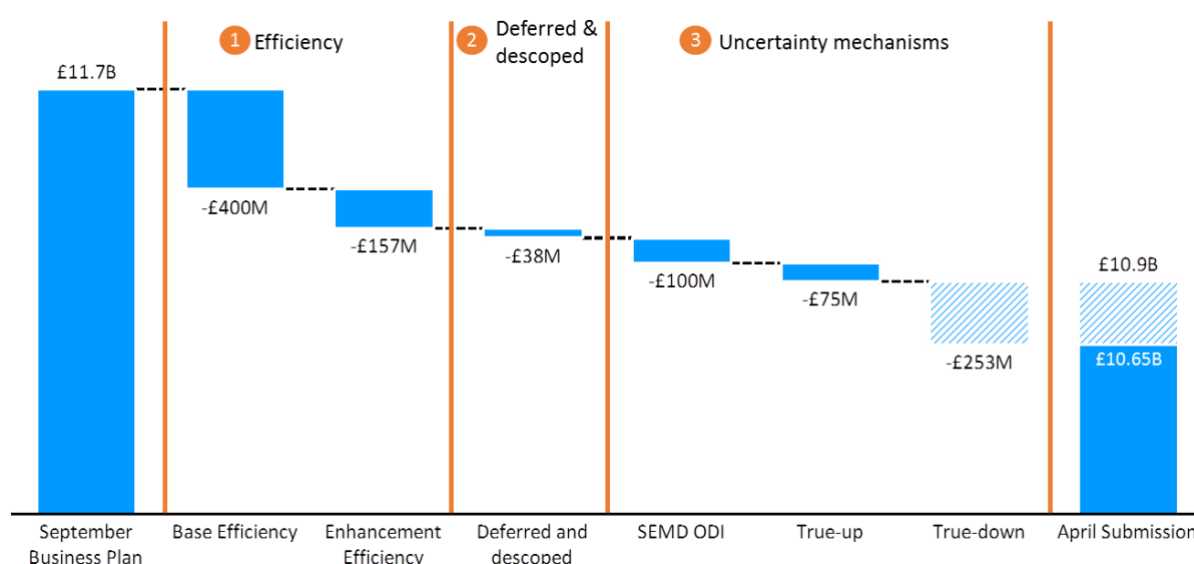
- **Reduced base totex by £400m:** This is £25m in Retail, £187m in Water and £187m in Wastewater. This reduction is partially predicated on work that we have done since our September Business Plan; although this has yet to be locked into firm plans, resulting in greater delivery uncertainty. However, we have listened to the feedback and are prepared to take the additional stretch challenge, by identifying more innovative ways of delivery and areas of efficiency.
- **Identified £157m of enhancement efficiency opportunities:** These are:
 - **£85m efficiency challenge on our metering programme:** We have made several commercial and operational improvements over the last 12 months since our original forecast was put together;
 - **£20m efficiency challenge on our water efficiency WRMP programme:** This is a result of reviewing the activities already included in our botex programme alongside planned enhancement activities;
 - **£20m efficiency challenge on water network emerging growth projects:** The scope of some of our growth projects is as yet undefined and we have accepted an additional efficiency challenge using Ofwat's feeder model as a point of reference; and
 - **£32m efficiency challenge on other activities:** Such as trunk mains monitoring, urban pollution management studies and our odour programme.
- **Deferred and descope £38m of programmes:**
 - Cancelled £5m of solutions to Metaldehyde levels and £9m of river flooding resilience; and
 - Deferred £24m of spend transferred private pumping stations and sewers into AMP8.
- **Uncertainty Mechanisms:** Over a number of spend items where there is uncertainty, we propose the following mechanisms:
 - **Extra ODI (£100m):** In which allowances are only recovered if the external cost driver outturns:
 - *SEMD:* £100m of spend, subject to DEFRA finalisation of the scope of work required;
 - **True-up Uncertainty Mechanism (£75m):** In which allowances are only recovered if the external cost drivers outturn:
 - *Business Rates:* £75m, which relates to the difference in assumptions between Ofwat's IAP and our plans;



- **True-down Uncertainty Mechanisms (£253m; not including £151m Strategic Water Resources):** In which allowances are taken from the RCV, if an Ofwat gateway review concludes that the spend is unnecessary, given greater clarity at that point, funds are returned to customers:
 - *North East London resilience scheme:* £181m for the first phase of a multi-decade investment to improve water supply resilience across London; and
 - *National environment programme:* £72m for a small number of atypical projects: sanitary parameters, phosphate, first time sewerage.

3.15 **Strategic Water Resources:** Further, £151m has been allocated by Ofwat for developing future water resources. Given the uncertainty, Ofwat has suggested a mechanism with gateways. The specific treatment of this item will be clarified through the remainder of the PR19 review.

Figure 1: Breakdown of additional cost stretch between our September Business Plan and April Submission



Source: Thames Water.

3.16 This is a substantial package of measures – together with the commitment to increase our performance outcomes, which also carry additional costs, for which we are not seeking additional allowances. Together with the cost efficiencies already included in our September Business Plan, this additional challenge **increases our average base cost efficiencies per customer from 13.6% to 22.5%** between AMP6 and AMP7²⁶ and is in addition to the increased stretch on relevant PCs that we described in Section 2.

3.17 Further, this package allows us to reduce customers' average bills. Our September Business Plan committed to not increase the average bill from AMP6 into AMP7. As a result of the additional challenge in this April Submission, we will be able to deliver a small but significant 1.3% reduction in average annual combined household bills in AMP7. Moreover, sustaining efficiencies will allow us to keep average annual combined household bills flat in real terms until 2030, based on our initial long term assessment.

²⁶ Normalised for power and rates; measured per property, from AMP6 to AMP7.



D ii) Base cost - additional stretch

3.18 As set out above we are reducing costs by £400m, of which £374m will come out of base, and we are removing £75m of business rates into an uncertainty mechanism described further below.

3.19 We are committed to this reduction in costs of £400m: £25m in Retail, £187m in Water and £187m in Wastewater. This reduction is partially predicated on work that we have done since our September Business Plan; although this has yet to be locked into firm plans, resulting in greater delivery uncertainty. However, we have listened to the feedback and are prepared to take the additional stretch challenge, by identifying more innovative ways of delivery and areas of efficiency. The assumptions behind this reduction are:

- **Retail - £25m:** Based on an acceleration of self-serve due to the implementation of Project Spring and the acceleration of our new web platform that offloads contact to lower cost, move effective channels;
- **Water - £187m:** Based on reducing the quantum and cost of failure by applying our CALM network philosophy and rolling out a new digital work management platform to ensure maximum field productivity and minimal repeats; and
- **Wastewater - £187m:** Based on digitalising our sewer network by rolling out low cost monitors and a more rapid expansion and exploitation of our Fieldworks Work Management platform (that has already been rolled out to all blockage engineers).

3.20 The net effect of these changes is shown in Table 2 below:

Table 2: Comparing base expenditure between the September Business Plan and April Submission

	Base Totex	Capex	Opex
September Business Plan	£8,238m	£3,159m	£5,080m
Technical adjustments	£105m	£73m	£32m
Updated September Business Plan	£8,344m	£3,232m	£5,112m
Base efficiency	(£400m)	-	(£400m)
Business Rates reduction – taken to 'True-Up'	(£75m)	-	(£75m)
Other changes (e.g. overhead allocations)	£43m	(£17m)	£60m
April Submission	£7,912	£3,215m	£4,697m
Change from September Business Plan	(£326m)	£56m	(£383m)

Source: Thames Water.

3.21 Therefore, effectively (excluding technical adjustments) the **April Submission features a base opex cost stretch of £415m** (£400m, £75m, less £60m), a 5% reduction on the September Business Plan.

3.22 The September Business Plan already included a significant reduction in average base opex cost per customer of 13.6% between AMP6 and AMP7. The additional base opex challenge, combined with the adjustments mean that we have **increased the reduction in average base operating cost per customer from 13.6% to 22.5%** between AMP6 and AMP7.



D iii) Enhancement cost - additional stretch

3.23 The adjustments in this section use our view of enhancement totex presented in our September Business Plan as a starting position.

Table 3: Summary of enhancement cost additional challenge

	Totex	Capex	Opex
September Business Plan	£3,450m	£3,069m	£381m
Technical Adjustments	(£151m)	(£117m)	(£33m)
Updated September Business Plan	£3,299m	£2,952m	£348m
Projects de-scoped	(£14m)	(£13m)	(£1m)
Additional efficiency challenge	(£157m)	(£130m)	(£27m)
Projects deferred to AMP8	(£24m)	(£24m)	-
SEMD reduction taken to ODI mechanism	(£100m)	(£100m)	
Other changes (e.g. overhead allocations)	(£13m)	(£13m)	-
April Submission	£2,991m	£2,671m	£320m
Change from September Business Plan	(£459m)	(£398m)	(£62m)
Included in the 'True Down' Uncertainty Mechanism	£253m	£252m	£1m

Source: Thames Water.

Projects de-scoped

- 3.24 We have cancelled £5m of solutions to manage Metaldehyde levels because of the Government's announcement that a ban will take effect in Spring 2020. In Section 2, we stress that an ODI is still required for Metaldehyde, due to likely stock piling in the run-up to any ban and the time it will take for Metaldehyde levels in run-off from fields to dissipate after any ban.
- 3.25 Further, we have cancelled £9m of river flooding resilience projects at sewage pumping stations, as the 1:1,000 year protection that they are designed to mitigate is not a statutory requirement and may not represent good value for money for customers.

Additional efficiency challenge

- 3.26 We have carried out additional cost assurance and benchmarking activities since our September Business Plan. We have undertaken a bottom up assessment of solutions in our plan, using our own benchmarking and Ofwat's enhancement feeder models as a point of reference to challenge areas that would indicate that we may potentially be an outlier. We have accepted a £157m efficiency challenge on our September 2018 totex forecast, including:
- **£85m efficiency challenge on our metering programme:** We have made several commercial and operational improvements over the last 12 months, since our original forecast was put together;
 - **£20m efficiency challenge on our water efficiency WRMP programme:** This is as a result of reviewing the activities already included in our botex programme alongside planned enhancement activities;



- **£20m efficiency challenge on water network emerging growth projects:** The scope of some of our growth projects is as yet undefined and we have accepted an additional efficiency challenge using Ofwat's feeder model as a point of reference; and
- **£32m efficiency challenge on other activities:** Such as trunk mains monitoring, urban pollution management studies and our odour programme.

Projects deferred

- 3.27 We have deferred £24.3m of spend on transferred private pumping stations and sewers from AMP7 into AMP8. We are comfortable that deferring this spend will not adversely impact on the commitments we are making to reduce internal sewer flooding and pollution.
- 3.28 A further net £13m has been deducted from our enhancement totex forecast for AMP7 as a result of the technical adjustments and overhead re-allocation changes.

D iv) WRMP and Strategic Water Resources

- 3.29 We have been developing our Water Resources Management Plan 2019 ("WRMP19") over the past 4 years, following an established statutory process that ensures we identify and assess a wide range of options based on extensive engagement with our customers, regulators and other stakeholders. Our plan has strong dependencies with other water companies, particularly Affinity Water, whose own WRMP has been delayed which has created uncertainty with our plan. We received extensive feedback on our draft WRMP19 a year ago, which required material changes to our plan, and we chose to consult publicly for a second time to maximise stakeholders' awareness of and ability to shape the options we put forward.
- 3.30 We have been developing our Water Resources Management Plan 2019 (WRMP19) over the past 4 years, following an established statutory process that ensures we identify and assess a wide range of options based on extensive engagement with our customers, regulators and other stakeholders. Our plan has strong dependencies with other water companies, particularly Affinity Water, whose own WRMP has been delayed which has created uncertainty with our plan. We received extensive feedback on our draft WRMP19 a year ago, which required material changes to our plan and we chose to consult publicly for a second time to maximise stakeholders' awareness of and ability to shape the options we put forward.
- 3.31 We received further feedback on our revised draft WRMP19, particularly on our strategic water resource options, with a challenge from Ofwat for further evidence that our preferred programme was in the best interests of customers, and further challenges from the Environment Agency (EA) to explore how we can manage the uncertainty around which option would offer best value for customers, including the volume capability and environmental impact of the Deephams Re-Use option, compared with the Beckton Re-Use option.
- 3.32 To deal with the potential need to change options in our revised draft WRMP19, we have developed an 'adaptive pathway' for alternative options, with the support of the EA. This pathway will help decision-makers better understand our approach to managing uncertainty and feel sufficiently confident to approve our plan. So while we have been delayed in the preparation of our WRMP19, we feel confident that we have put forward a plan that is in the best interests of customers. We will submit our revised draft WRMP19 on 1 April and look forward to working with other companies and interested parties over AMP7.



- 3.33 Our adaptive pathway and a description of our April Submission approach is found in The WRMP and Strategic Water Resources Appendix²⁷.
- 3.34 Further, we also received feedback from Ofwat on our claims for water trading incentive payments. This feedback was on 28 February, separate from its 31 January IAP feedback. Ofwat was minded to allow one of our two claims, but reject the other. We have considered Ofwat's feedback, but remain of the view that both trades comply with Ofwat's guidance and promote economically and environmentally rational water trading. We request that Ofwat reconsiders its intention to reject one of our claims²⁸.

D v) Proposed uncertainty mechanisms

- 3.35 For a business of the size and complexity of Thames Water, it is difficult to plan in detail for all eventualities and the investment that will be required over the next six years to 2025, given the level of uncertainty surrounding some projects and cost items. It is neither a good use of customers' money, nor efficient, to plan in detail projects that will not be needed for several years and where changing circumstances in the real world, may affect the timing and scope of specific projects. But equally, we do not think that it is in customers' interests to delay some projects for a further 5 years, until the PR24 review.
- 3.36 Further, while some costs are driven by external drivers, the level of such drivers can be uncertain during the regulatory review.
- 3.37 In the supplementary research that we conducted in January 2019, customers supported the use of incentives to deal with uncertainties around planning for the future²⁹. For the uncertain projects and cost items that we have identified we do not believe that existing regulatory mechanisms in Ofwat's framework provide full coverage and protection for customers. For example, current best practice in Water Resources Planning advocates the use of adaptive pathways to address uncertainty. In specific response to uncertainty in Water Resources Planning, a gated approach has been proposed by Ofwat³⁰. This is welcomed, but we consider this approach could be applied more broadly to other aspects of our plan.
- 3.38 The totex cost sharing framework in theory allows companies to defer or accelerate projects between price controls in order to achieve levels of service, while holding them to account for cost overruns and to share in efficiencies with customers. However, the cost sharing ratios set by Ofwat can have the unintended consequence of acting as a disincentive to companies to progress uncertain solutions.
- 3.39 The ODI framework focusses on setting incentives around stretching levels of service, penalties for poor performance and rewards for outperformance. This framework is not specifically intended to allow uncertain projects, which may firmly be in the interests of customers and the environment, to proceed. Without additional controls, the ODI framework has the unintended consequence of encouraging companies to progress more certain short-term solutions to generate rewards.

²⁷ TW-CE-A24: WRMP and Strategic Water Resources.

²⁸ TW-OC-A9: Water Trading Incentives Action Response; TW-OC-A10: PR19 Water Trading Report – RWE; and TW-OC-A11: PR19 Water Trading Report - Essex & Suffolk.

²⁹ TW-CSE-A1: What Customers Want v13 (final).

³⁰ Supply-demand balance enhancement: feeder model summaries, Ofwat, January 2019.



3.40 Therefore, we propose two further mechanisms for dealing with important project and cost items, where uncertainty currently prevents a clear assessment:

- True-down Uncertainty Mechanism; and
- True-up Uncertainty Mechanism.

True-down Uncertainty Mechanism

3.41 We propose that we place some of those projects that have uncertain scope and/or timing in a regulatory mechanism that will allow Ofwat to have additional oversight of projects before they commence thus providing additional customer protection.

3.42 We are open as to whether this is a new regulatory mechanism or an ODI³¹.

3.43 We have identified £253m of projects, as listed in Table 4 below, where the scope and/or timing of the project is uncertain at this stage and where the nature of the project is either atypical (and therefore not in base costs) or is an enhancement. All the solutions that we have selected for this uncertainty mechanism are also 'discrete' (i.e. site or location specific) and therefore, they are suitable for a gateway type process.

3.44 In addition, we have not included the £151m referred to by Ofwat for strategic regional water supply solutions development³² in the base or enhancement costs. We consider that this investment could be included in this True-Down Uncertainty mechanism, given the current uncertainty around discussions with the other water companies and Ofwat progress throughout the remainder of this price review. The specific treatment of this item will be clarified through the remainder of the PR19 review.

Table 4: Proposed projects in regulatory True-down Uncertainty Mechanisms

Service	Totex	Projects
Water	£181m	North East London Resilience
Wastewater	£72m	Atypical projects from the National Environment Programme (sanitary parameters, phosphate, first time sewerage)
Total	£253m	
Ofwat's proposed True-down Uncertainty Mechanism		
Strategic Water Resources	£151m	Accounting for Ofwat's allowance, included in the IAP

Source: Thames Water.

3.45 We envisage that a True-down gateway would require full justification for a project to proceed from design to construction. We would expect to demonstrate:

- That we fully understand the need for investment;
- That we have explored and appraised all available options (including innovative totex solutions such as partnership working and alternative use of markets);

³¹ At present, we have not included it as a performance commitment in the APP1 data table.

³² Ofwat, Thames Water Action Summary Table, page 7.



- Customer engagement and customer views in developing a preferred option (which may involve customer co-creation of the solution for delivery); and
 - Cost benefit assessments drawing upon customer valuations and preferences for the benefits and costs that are forecast.
- 3.46 We would expect to involve our CCG, Ofwat and / or independent technical experts in the gateway process.
- 3.47 The outcome of a True-down gateway process would be either:
- Agreement that the most cost beneficial option has been identified and that we proceed using the remaining funding that has already been allowed for in our determination; or
 - That an efficient cost-beneficial solution cannot be found, or customers, stakeholders and independent technical experts have strong reservations about a project proceeding. In this event, the remaining funding for the project in AMP7 would be returned to customers as a revenue neutral reduction to the RCV, as part of the PR24 review.
- 3.48 This mechanism supersedes the enhanced ODIs for resilience which we included as a component of our 'back in balance' package within our September Business Plan. Our new approach provides additional customer protection across a greater part of our investment programme.

True-up Uncertainty Mechanism

- 3.49 We have removed one item from our AMP7 totex forecast, as there is uncertainty around the external driver of the cost, at this stage as described above.
- 3.50 We are proposing to place this item shown in the table below, into True-up Uncertainty Mechanism, and subject it to a gateway process during AMP7, at which point the actual spend would be known.

Table 5: Proposed cost item in regulatory True-up Uncertainty Mechanism

Item	Totex (£m)	Rationale
Increase to Business Rates	£75m	Business Rates are driven by government and are beyond our control. Ofwat's IAP cost assessment makes no allowance for growth in wastewater assets or for water rates revaluations, which we value at £75m in AMP7.
Total	£75m	

Source: Thames Water.

- 3.51 Given the external control over this cost item, we propose that these costs are excluded from the PR19 totex allowance. If the cost outturns higher than Ofwat expected, then the additional costs would be added to the RCV at the end of AMP7, as part of the PR24 review. Such an adjustment would be revenue neutral for Thames Water.
- 3.52 Finally, £100m of SEMD costs have been treated as an ODI.

D vi) Direct procurement for customers

- 3.53 We have been engaging with Ofwat to discuss further potential for *direct procurement for customers* (DPC). These sessions have focused on a number of factors, including the technical



and value for money assessment. We want to work collaboratively to develop DPC as a delivery framework in the future, in the best interests of our customers.

- 3.54 Clearly, the evaluation of DPC projects will not always fit neatly into the regulatory review timelines - analysis is needed when projects have been developed sufficiently to enable meaningful evaluation. This is the case for some of the IAP's DPC actions (e.g. the North East London Resilience programme). As already agreed with Ofwat, we will share further analysis by the end of April 2019.

E Additional delivery risk

- 3.55 Compared to our September Business Plan, our April Submission includes more stretching performance targets and significantly lower costs. While we consider that we have been careful to ensure that the April Submission can still be delivered, it inevitably comes with more delivery risk, as we are aiming to deliver even more stretching performance with lower levels of financial and operational resources. While the business retains the necessary financial resources to deal with adverse shocks, the additional delivery risk - if it materialises - could make it harder for us to invest in innovation and to tackle the longer term challenges we face.

- 3.56 We are concerned not to stretch this delivery risk further than the measures set out in this April Submission. We note the concerns around climate change and population growth in the South East of England, that threaten our current operation. In recent weeks, this risk was highlighted by Sir James Bevan, Chief Executive of the Environment Agency said:

"Unless we all act to reduce water use and wastage, in a few decades' time there will not be enough clean water. Demand for water will rise as the population grows, whilst water supply is likely to reduce as the effects of climate change kick in. Around 25 years from now, where those two lines cross is known by some as the jaws of death – the point at which we will not have enough water to supply our needs, unless we take action to change things."

F Explaining the gap – concerns with the IAP's methodology

- 3.57 We have listened to the IAP's feedback and responded with a further stretching package of measures that have significantly extended our efficiencies – at increased delivery risk. We recognise that there is still a gap between our April Submission and Ofwat's IAP modelling results for costs. However, we have concerns with the IAP's methodology, which may explain the differences. We include a further description of some of these concerns in the Cost Response Appendix³³:

- **Concerns about Ofwat's approach to cost assessment:** The main econometric models used by Ofwat in the IAP are the result of a long process of engagement with the companies and we consider that they are reasonably robust as the theoretical base. However, we have a number of concerns about how these models were used in practice and the assumptions that the IAP made when using their results. The specific issues identified include:

³³ TW-CE-A25: Our Response to Ofwat's IAP Assessment of Costs.



- **The IAP compares Thames Water to an unrealistic notional company benchmark:** Ofwat's IAP cost allowances are calculated for a notional company which is at the industry upper quartile cost frontier, at the same time as being upper quartile performance in all key CPCs. This notional company does not exist for a company with the complexity and reach of Thames Water and so this benchmark is unrealistic³⁴. The IAP has set our cost allowances against upper quartile cost performing companies; while it also sets our outcome expectations against upper quartile PC companies – which we do not think is a fair approach.

As an illustration using business plan data, we have modelled the cost impact per connection of increasing PC performance to the upper quartile. For the companies with upper quartile forward looking cost performance, we calculate that this would equate to £14.00/connection in Water and £1.70/connection in Wastewater. This would allow these companies the resources they need to deliver an upper quartile performance, both for PCs and cost. When this adjustment is added to the costs of the upper quartile companies, then this provides a more realistic and fair benchmark for upper quartile performance in both PCs and costs.

When we compare the vanilla IAP benchmark result for costs, using this more realistic benchmark, then the fair assessment of our costs would increase by £59m in Water and by £10m in Wastewater, for AMP7³⁵. We believe that the impact of using an unrealistic expectation of achieving upper quartile for both cost and performance, given where the sector is today, explains some of the gap between the IAP and our plan. Further information is provided in the Cost Response Appendix³⁶;

- **Base cost benchmarks do not include enhancement opex:** The IAP has disallowed £363m of enhancement opex and reallocated this to base costs. Ofwat constructed the base cost benchmarks with clear definitions for the cost items that should be included. However, these did not include allowances for enhancement opex. This means that when our enhancement opex projections are added to the base costs, then they are being compared to non-comparable benchmarks.

Further, we are concerned that Ofwat's reallocation results in a penalty on our choice in favour of opex solutions, as opposed to capex solutions. Given the need for comparability, we ask Ofwat to consider these enhancement opex projections, alongside enhancement capex, with deep dives as appropriate;

- **Concerns about Ofwat expectations for the efficiency frontier shift:** The IAP grants allowances for a notional upper quartile company, then it assumes a further efficiency frontier shift of 1% p.a. for productivity, and a further 0.5% p.a. to account for the benefits of Ofwat's totex model. This 1.5% frontier shift acts to reduce cost allowances. For Thames Water, this removes £325m from our cost allowances.

We are concerned that this 1% p.a. frontier shift for productivity is too optimistic, given the evidence of weakening UK economy productivity, which over 10 years has averaged to 0.27%, with the last year's productivity only equalling 0.5%. Further, the frontier shift is

³⁴ While Portsmouth Water achieved both upper quartile cost and PC performance in Water, given its size, we do not consider that it is a fair comparator for Thames Water. We have excluded Portsmouth Water from our table.

³⁵ When Portsmouth Water is included in the analysis for Water, then we calculate the average unit cost of implementing upper quartile PC performance is £10.00/connection, which totals £42m for a company the size of Thames Water.

³⁶ TW-CE-A25: Our Response to Ofwat's IAP Assessment of Costs.



based on an arbitrary selection of productivity growth estimates across different industries and different time periods. We have taken the same data used in Ofwat's expert report and reproduced an average productivity improvement across the comparator industries for the latest time period available and this results a productivity benchmark of 0.6% p.a., which we consider is more realistic and should be taken into account in the draft determination.

In addition, we have questions about the evidence and assumptions underpinning the 0.5% additional shift for the totex model, which appears to be based on a sole observation from the electricity sector, combined with a number of unsubstantiated assumptions, discussed in the Cost Response Appendix³⁷. Given these concerns, we have discounted this 0.5% productivity caused by changes in Ofwat's regulatory framework.

When we apply these more evidence-based benchmarks mentioned above, in a range of 0.27% to 0.6% p.a., then resulting cost allowances are between £59m and £130m higher than the IAP's frontier shift of 1.5% p.a.

We believe that the combination of these choices within the IAP, further explains the gap between the IAP and our plans³⁷;

- **Specific challenges to Ofwat's modelling approach:** We have a number of additional concerns about specific items within Ofwat's modelling approach³⁸, related to:
 - **Wholesale econometric models:**
 - **Household growth:** Ofwat's IAP assumes lower growth in households than our plans. Our assumptions in the plans were based on the Local Authority forecasts, controlling for historic building rates; whereas, the IAP extrapolates a simple trend from historic rates. Further, this trend in the IAP is distorted by the economic downturn of 2008-14 (with housing being a lag factor). If the IAP had applied the Local Authority forecasts used in our plans, then the allowance for household growth would have been 50% higher. According to the IAP modelling, this significantly higher growth from the Local Authority forecasts will drive our Water costs higher by £132m and our Retail costs higher by £11m³⁹. We are concerned that the IAP's cost allowances significantly underestimate the cost of likely household growth. We ask Ofwat to re-visit its growth assumptions in the draft determination; and
 - **Asset age:** We have the oldest water network in England and Wales. This age impacts on both our costs and relevant PCs. Ofwat's IAP cost allowance does not reflect the age of these assets in the econometric benchmarking. In this April Submission, we have included a CAC⁴⁰ that articulates why we believe that our water costs will be driven higher by £120m, most significantly because of the age of our network.

³⁷ TW-CE-A25: Our Response to Ofwat's IAP Assessment of Costs.

³⁸ Further detail is included in TW-CE-A25: Our Response to Ofwat's IAP Assessment of Costs.

³⁹ We note that wastewater costs are not significantly sensitive to different assumptions for household growth.

⁴⁰ TW-CE-A4: London Network Maintenance.



- **Retail econometric models:**
 - **Inconsistent choice of upper quartile challenge:** In Wholesale, the IAP benchmarks are based on *historic* upper quartile performance; while in Retail, the IAP benchmarks are based on companies' *forward looking* business plan projections. We are concerned about the credibility of some of these forward looking projections. If the IAP had judged our retail costs against an historic cost benchmark, then it would have reduced our retail cost allowance by £130m less across AMP7. We need this cost allowance to deliver for our customers, and we ask Ofwat to consider a benchmark in retail based on historic upper quartile performance, which we believe is more indicative of actual performance;
 - **Inconsistent and counter-intuitive transience effect:** Transience drives bad debt, and is a particular issue for London affecting Thames Water more than the rest of the industry. Not all of the IAP's econometric models include a transience effect; and those that include this effect assume that greater transience results in lower costs. This is not intuitively correct, because revenue from a larger number of transient customers is more difficult to recover. We ask Ofwat to treat transience as a cost burden and apply this impact consistently across our retail cost allowances. We have valued the impact of transience for our region at £63m across AMP7, as explained in the Population Transience CAC⁴¹.
- **Specific challenges to Ofwat's cost adjustment claims conclusions:** In this April Submission, we outline cost adjustment claims for cost items that are not be included in the cost models:
 - **Water stress:** The IAP applied a 13% efficiency challenge to our cost of improving metering in London, matching the IAP's 13% efficiency challenge for base costs. We have made several commercial and operational improvements over the last 12 months, since our original forecast. This allows us to accept £85m in efficiency challenge. However, we ask Ofwat to re-evaluate the remaining £36m efficiency challenge as these allowances are required for an important project;
 - **Environmental Permitting Regulations (EPR):** We believe that Ofwat has misunderstood the cost driver in our September CAC, as relating to the Medium Combustion Plant Directive. We ask Ofwat to re-evaluate this CAC for £39m, as we can confirm that it relates solely to the Industrial Emissions Directive, for which the funds are required during AMP7; and
 - **Customer Relationship Management and Billing System (CRMB)⁴²:** Investment in CRMB will facilitate a step change in the service we provide for our customers; it is a key enabler for our customer transformation programme. However, the size of the investment would distort our Retail costs when benchmarked against companies that are not currently investing in a CRMB. We ask Ofwat to allow £67m as a CAC;
- **The higher costs of servicing the Central London water network needs to be recognised:** We need to invest in our networks. We have the oldest water networks in the country, with a particular issue in Central London, where servicing the network is difficult and costly. Specifically, the next generation of renewal for our water network in Central London

⁴¹ TW-CE-A3: Population Transience.

⁴² TW-CE-A2: CRMB.



is likely to require significantly more innovative and collaborative solutions to maintain affordability and high service standards for our customers. Focus on Central London is important given the density of the capital, the complication of interacting utilities and transport systems and the necessity to consider disruption for our local customers and local authorities.

Water mains replacement within Central London is particularly expensive, given these difficulties – and to date, our efforts have focused on more cost effective areas in our region. Mains replacement in the Central London Borough of Westminster has cost c.50% more per metre than the same work in the suburban Borough of Greenwich (c.£900 per metre, compared to c.£570 per metre). We note that these issues are common for other ageing network utilities in Central London.

We need to find further innovative ways to tackle our Central London water network issues in the future. We want to engage with Ofwat ahead of the draft determination to discuss how future innovative solutions for water network issues could be best designed and applied to meet our customers' long term needs and the concerns of our regulators;

- **Ofwat's calculation of the pension deficit repair allowance needs to be updated:** Ofwat's IAP included an allowance for pension deficit repair of £25m (2017/18 CPIH prices). This is materially lower than our understanding of the allowance implied by Ofwat PR14 documentation⁴³ (£70m, 2017/18 CPIH prices), which we queried with Ofwat in February 2019. Ofwat's response⁴⁴ indicated that the IAP allowance was based on a £380.4m pension deficit at PR09 (2007/08 RPI prices). This figure is inconsistent with our understanding of the PR09 Final Determination, which states that:

*"We have estimated the deficit recovery payments based on a deficit of £440m at December 2008"*⁴⁵.

Therefore in our data tables, we have retained our original figure for the pension deficit repair contributions, in line with Ofwat's PR14 determination⁴³. We would like to engage with Ofwat if our understanding is incorrect.

- 3.58 We ask Ofwat to consider each of these points, as we believe that they account for much of the difference between Ofwat's IAP cost assessment and our plans.

⁴³ IN13/17: Treatment of companies' pension deficit repair costs at the 2014 price review, Ofwat, October 2013.

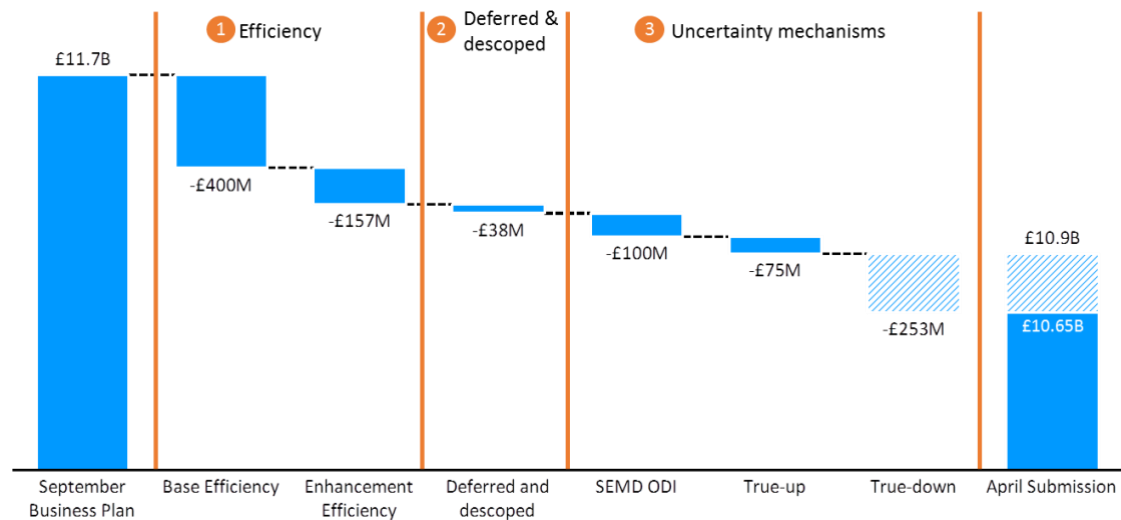
⁴⁴ Email from Ofwat, 14 February 2019.

⁴⁵ Final determination, Setting price limits for 2010-15, Supplementary report for TWUL, page 59, Ofwat, December 2009.

G Summary

3.59 Our September Business Plan committed us to an ambitious programme of investment, together with an average base operating cost per customer efficiency of 13.6% between AMPs. Ofwat's IAP challenged us to seek significantly further efficiencies in both base and enhancement costs. We have responded positively and have stretched our programme to find average base operating cost efficiencies of 22.5%, in our customers' best interests.

Figure 2: Breakdown of additional cost stretch between our September and April Submissions



Source: Thames Water.



Section 4

Risk and Return

A Introduction

- 4.1 We need to invest in the future of Water and Wastewater in London and the Thames Valley, for the sake of current and future customers. In order to invest, we need a fair outcome for current and future investors that recognises the risk that they adopt in growing the capability of our operation. We look to Ofwat to support this investment.
- 4.2 This Section outlines our approach to setting an appropriate balance of risk and return that operates in the best long-term interests of our customers, as initially described in our September Business Plan; as well as the additional challenge we have decided to take in response to Ofwat's IAP. Our discussion is set out as follows:
- **Section B:** Our September Business Plan;
 - **Section C:** Ofwat's IAP;
 - **Section D:** Additional stretch in our April Submission;
 - **Section E:** Additional delivery risk and financing assessments; and
 - **Section F** concludes.

B Our September Business Plan

- 4.3 Our September Business Plan set out our proposals for an appropriate balance of risk and return, including a 'Back in Balance' package supported by our customers, alongside the use of Ofwat's 'early view' on the cost of capital and retail margin. Our plan also reflected our customers' views on the level of bills, bill profile and balance of rewards and penalties within ODIs, all of which provided key inputs into our overall assessment of financial returns, financeability and long term resilience.

B i) 'Back in Balance'

- 4.4 The key components of the 'Back in Balance' package set out in our September Business Plan:
- **Equity:** Increase the equity buffer to £4.7bn, reducing gearing to 76.2% by 31 March 2025;
 - **Gearing sharing:** Share the benefits of outperformance on the cost of new debt with customers;
 - **Distributions:** Enhance our distributions policy, with strong links to operational performance;
 - **Reinvestment:** Reinvest underspends on specific resilience schemes if these do not proceed; and
 - **Governance:** Further strengthen Board governance and executive pay policies.



- 4.5 Customer feedback on our proposals was very positive. We listened to this feedback and updated our package of measures accordingly.
- 4.6 In our September Business Plan, we preferred the following package of measures, combining de-gearing, dividend restraint and sharing of outperformance on the cost of new debt to Ofwat's indicative gearing sharing mechanism, on the grounds that it operates in the long term interests of customers, and helps ensure that the company (and the sector) remains investable and that this investment comes at a low cost.

B ii) Operational resilience

- 4.7 In our September Business Plan, we explained the key risks that we face to our corporate, operational and financial resilience in the short to long-term. We set out how these were identified and prioritised and how we optimised an integrated programme of actions to manage them. We proposed a £2.1bn investment plan to address our most pressing operational risks and detailed how it was supported by customers.

B iii) Fair return

- 4.8 In our September Business Plan, we used a wholesale weighted average cost of capital (WACC) of 2.3% (stated in vanilla terms, on an RPI-stripped basis) and a net margin of 1% for Retail household, consistent with the 'early view' stated by Ofwat in its final PR19 methodology document.
- 4.9 We noted that Ofwat's reference to the WACC as 'an early view' on the basis that it will revisit this in 2019, as the final determination will be set some two years after publication of the 'early view' adopted in our plans.
- 4.10 We emphasised that there are many factors that might impact on what will be the appropriate estimate for the WACC for the period from 2020–25 and that these would need to be fully taken into account by Ofwat in its determinations. We highlighted that such factors broadly fell into four categories: i) WACC estimation methodology; ii) market evidence; iii) factors relating to the final PR19 methodology; and iv) the risk and reward balance struck within the final determination.

B iv) Distributions

- 4.11 In our September Business Plan, we noted that our shareholders have a critical role in enabling our substantial investment, with billions of pounds of capital invested in the equity of Thames Water, and that it is important that as a healthy and resilient business we are able to pay distributions.
- 4.12 The Board of Thames Water decided to include a dividend level in our Business Plan lower than the 5% benchmark set out in Ofwat's 'Back in Balance' position statement, specifically in order to fund de-gearing. This follows our decision to very significantly reduce our dividends in AMP6 to support increased investment in operational improvements for our customers. Distributions to external shareholders were expected to be £20m per annum over the AMP7 period.



B v) Gearing, financeability and financial resilience

- 4.13 We reported in our September Business Plan that from March 2018 onwards, shareholders plan to reduce gearing by 5% to 76.2% by the end of AMP7 through the investment of an additional c.£900m of capital in Thames Water.
- 4.14 Our September Business Plan was financeable on the *notional* balance sheet at BBB/Baa2 and required no use of PAYG or RCV run-off levers to support notional financeability. We noted that there were also mechanisms which would allow the notional structure to achieve a rating of BBB+/Baa1. Evercore concluded independently that the company would be able to finance its Business Plan at a rating of BBB/Baa2, before any additional steps taken to uplift this to BBB+/Baa1⁴⁶.
- 4.15 Under our *actual* capital structure, our September Business Plan generated financial ratios consistent with an investment grade credit rating of BBB+/Baa1⁴⁷. This view was supported by our advisors, Evercore, who concluded independently that the company's business plan was financeable, with an estimated credit rating of BBB+/Baa1 or above⁴⁸.
- 4.16 We also concluded that we are financially resilient and able to operate within our financial covenants and maintain sufficient liquidity facilities to meet our funding needs over a ten year assessment period. We considered the financial resilience of our plan to a range of plausible, yet severe downside scenarios appropriate to the business. In doing so, we adopted an approach consistent with our yearly statements of long term viability (LTVS).

B vi) Overall risk and reward balance (RORE range)

- 4.17 Our September Business Plan demonstrated an overall RORE range of +1.40% to -3.75% based on combined upside (P10) and downside (P90) scenarios. We also presented for information and context a comparison of our low case P90 RORE output versus the combined scenario set out by Ofwat within 'Back in Balance'. Our downside scenario generated an average RORE of -3.75% for the AMP, which is lower than the 'Back in Balance' combined scenario which generated an average -3.54% RORE.

C Ofwat's IAP

- 4.18 In its IAP, Ofwat challenged our position in a number areas with regard to our 'Back in Balance' package: how we secure long term resilience; and how we assess financeability, financial resilience and the overall balance of risk and return through RORE.

⁴⁶ Evercore, TSD355-PR19-Financial Covenant 3 and Financeability Assurance.

⁴⁷ S&P rating of BBB+ for Class A debt and Moody's corporate family rating of Baa1.

⁴⁸ Evercore, TSD355-PR19-Financial Covenant 3 and Financeability Assurance.



4.19 We set out in the following sections each element of Ofwat's challenge and how we have responded to that within our April 2019 plan:

- C i) 'Back in Balance':
 - o Gearing outperformance sharing;
 - o Dividend and executive pay policies;
- C ii) Operational resilience;
- C iii) Fair return;
- C iv) Financeability assessment;
- C v) Financial resilience assessment; and
- C vi) Overall risk and reward balance (RORE range).

C i) 'Back in Balance'

4.20 The IAP focussed its comments in the following areas:

- Gearing outperformance sharing; and
- Dividends and executive pay policies.

Gearing outperformance sharing

4.21 In its IAP, Ofwat states that:

"on gearing benefits sharing the company's plan falls significantly short of high quality. The company forecasts gearing will remain above the 70% threshold and rejects our gearing benefits sharing mechanism and does not offer an alternative mechanism which delivers equivalent benefit for customers in the round."⁴⁹

4.22 In its action points for Thames Water, Ofwat has indicated that:

"We propose to include our default mechanism in the company's draft determination in the absence of company action to include it in its resubmitted business plan"⁵⁰;

4.23 We still disagree with the underpinning principles behind Ofwat's Gearing Outperformance Sharing Mechanism (GSM) and its design, as we set out in our September Business Plan and in our response⁵¹ to Ofwat's original consultation on putting the sector back in balance⁵². The key points of our objection being:

- We disagree with the implication that gearing above 65% implies a lack of financial resilience; no evidence is presented that the quantum of equity invested in TWUL, or other companies with gearing in excess of the current notional assumption, is inadequate to cope with the cost shocks that it might face. We demonstrate that we are financially resilient in Section E below;
- Ofwat's GSM ignores a fundamental tenet of corporate finance theory: namely, that the cost of equity naturally increases as the ratio of debt to equity rises. Ofwat's GSM is asymmetric

⁴⁹ Thames Water: Test question assessment, Ofwat, January 2019 – test question CA3.

⁵⁰ Thames Water: Actions summary table, Ofwat, January 2019 – action TMS.CA.A5.

⁵¹ TSD311-PR19: Letter to Rachel Fletcher Ofwat 26 July 2018.

⁵² Putting the sector back in balance: Consultation on proposals for PR19 business plans, Ofwat, April 2018.



in that it seeks to reflect in prices, the interest rate benefits of securitisation arrangements but not the associated costs and risks to equity;

- Notwithstanding statements to the contrary, Ofwat's GSM effectively abandons a long-standing regulatory principle that financial arrangements are a matter for companies, as the proposals severely penalise companies with capital structures that deviate from the notional gearing assumption;
- Relative to other companies, Ofwat's GSM penalises companies with more efficient debt management (a lower actual cost of debt creates a bigger spread with the cost of equity, which turns into higher penalty); and
- Major new regulation with a significant financial impact should include a reasonable transition period, to allow companies to mitigate the risk of that impact and respond positively to the incentives.

4.24 For each of these reasons, we remain concerned that Ofwat's original GSM will deter investment in Thames Water; and more broadly, it could compromise the long term investability of the entire sector which has been a critical component of attracting long term and low cost capital into our industry. This could weaken investment and lead to reduced and service levels, thereby harming the long term interests of both customers and the environment.

4.25 However, we recognise the need to offer a fair deal to our customers and the regulator's right to set targets, as well as the incentives to achieve these targets. Accordingly, if Ofwat is minded to impose a GSM, then we have a recommendation for amending the mechanism in the interests of customers (without prejudice to our objections to this approach in principle)⁵³. We set out our proposals within Section 4.45 below.

Distributions and executive pay policies

4.26 Ofwat's IAP also requires the Company to confirm that it is committed to adopt the expectations on dividends and performance related executive pay for 2020-25 as set out in 'Putting the sector in balance' to include:

- A commitment to transparency about how the dividend policy in 2020-25 takes account of obligations and commitments to customers for the dividend policy that is applied in 2020-25 and when determining dividends;
- Providing visibility and evidence of substantial linkage of executive remuneration to delivery to customers;
- A clear explanation of stretching performance related pay targets and how they will be applied;
- A clearer explanation of how the executive performance related pay policy will be rigorously applied and monitored;
- A commitment to report how changes to the executive pay policy, including the underlying reasons for this, are signalled to customers; and
- A commitment to publish the executive pay policy for 2020-25 once it has been finalised.

4.27 We have listened to this feedback and have clarified our distributions and executive pay policies as set out Section D ii) below.

⁵³ For the avoidance of doubt, this recommendation replaces our September Business Plan proposal to share with customers the 'benefits' of outperformance on the cost of new debt.



C ii) Operational resilience

- 4.28 In its IAP, Ofwat was critical of the level of evidence that we provided for the two 'resilience' tests. Ofwat felt that we did not adequately demonstrate that we have sufficiently robust processes to assess and prioritise systematically, the risks that we face as a business, and to develop an optimised programme of risk management activities, supported by customers. Ofwat also provided a number of actions that it required us to address in our April Submission.
- 4.29 We accept these challenges and in our April Submission we provide further detail on how we have prioritised the risks to our corporate, operational and financial resilience. We explain more fully the activities – both changes in the way we do things and the investment we need to make, including our £1.86bn operational resilience programme, in order to increase our resilience to these, and wider, risks.
- 4.30 In the Resilience Appendix⁵⁴, we consolidate this information to demonstrate how we have considered corporate, operational and financial resilience in an integrated way. We also explain how we have prioritised our short, medium and long-term risks through a comprehensive assessment process. We describe how our strategic priorities have been informed by our assessment of these risks, together with customer preferences from our extensive customer engagement, which in turn have informed the activities and investments in our April Submission.
- 4.31 We show how we have objectively assessed a wide range of solutions, covering the Cabinet Office's '4Rs', including markets, partnerships, and 'soft' solutions and demonstrate why the solutions we propose are the best value for money over the long-term and are supported by our customers.
- 4.32 Our resilience plan is embedded in our approach for managing our business, and our range of ODIs, for the benefit of our customers and the environment.
- 4.33 In its IAP, Ofwat also recommended that we commit to developing an action plan for an Integrated Resilience Framework, and that by 22 August 2019 we will provide this action plan. In the Resilience Appendix⁵⁴, we respond to this commitment and explain how we plan to improve on our existing risk management framework and we will provide further detail by the August deadline.

C iii) Fair return

- 4.34 Ofwat's IAP acknowledged that we had incorporated into our September Business Plan, the cost of capital and retail margin caps set out in Ofwat's PR19 Final Methodology 'early view'. The IAP did not raise any actions connected to the fair return. In Section D below, we outline how we have treated the fair return in the revised data tables, which are included in this April Submission, as well as further research on the topic, which we request Ofwat to consider in its draft determination.

C iv) Financeability assessment

- 4.35 In its IAP, Ofwat challenged us on one aspect of our financeability assessment: that there was insufficient evidence that the company is financeable based on its actual structure. The challenge centred on whether the financial ratios were consistent with the company's targeted credit rating.

⁵⁴ TW-RR-A1: Resilience.



- 4.36 In forming our view on the financeability of our September plan we sought specific input from Evercore, our expert financial advisor. It considered that our overall Business Plan was consistent with our current Baa1/BBB+ rating, on the basis of their assessment of all relevant metrics for our current rating, including *funds from operations to net debt* (FFO/net debt).
- 4.37 In Section E below, we describe our updated financeability assessment for this April Submission, which addresses the concerns expressed by Ofwat in its IAP.
- 4.38 Further, while we conclude that our revised April Submission supports our current rating and is financeable on that basis, as part of our financial resilience assessment we have explicitly addressed our ability to finance our plan in the event of a downgrade to our credit rating. Further detail is provided in the Finance and Financeability Appendix⁵⁵.

C v) Financial resilience assessment

- 4.39 Ofwat's IAP indicated that we should explain how we have taken account of the risks to our financial resilience associated with:
- Our plan to maintain a Baa1 credit rating;
 - The introduction of a GSM;
 - Our current and planned gearing levels;
 - Requirements to refinance subordinated debt; and
 - Capital for the business raised as debt elsewhere in the corporate group, outlining associated risk management/mitigation approaches identified by the company, to provide assurance on long term financial resilience.
- 4.40 We have taken these challenges into account within our assessment of financial resilience of our April Submission, as set out in Section E below, with more detail included in the Finance and Financeability Appendix⁵⁵.

C vi) Overall risk and reward balance (RORE range)

- 4.41 In its IAP, Ofwat recognised that our business plan demonstrated high quality evidence for most areas of our RoRE assessment. However, Ofwat did note our statement that totex outcomes are skewed to the downside to be of concern. Given the increasingly challenging targets placed on water companies, we believe that the probability of underperformance is higher than that of outperformance hence totex outcomes would be skewed more to the downside. Further, there are circumstances which can generate underspends for which there is either no corresponding opposite impact or much lower underspends in relative terms (e.g. it is difficult to envisage upside events which would result in totex overspends which would be greater than or equal to the adverse totex impact of a cryptosporidium event).
- 4.42 In Section E below, we describe our updated RORE assessment for this April Submission, breaking out the RORE ranges between totex and key outcome incentives such as ODIs, C-MeX and D-MeX.

⁵⁵ TW-RR-A2: Finance and Financeability.



D Additional stretch in our April Submission

4.43 We have listened to the challenges made to our operational and financial risks and returns for AMP7 from Ofwat's IAP. In this April Submission, we want to respond positively by making helpful suggestions for the application of a GSM and to clarify our distributions and executive pay policies. We also recognise that Ofwat needs to undertake further research into the fair return. Therefore, we describe how we have approached the fair return within the data tables in this April Submission, as well as providing further research that we expect Ofwat to consider. This section includes the following items:

- D i) A gearing sharing mechanism;
- D ii) Distributions and executive pay policies; and
- D iii) Fair return.

4.44 We have also taken into account Ofwat's challenges within its IAP on how we assess our financeability and financial resilience as set out in our consideration of these issues within Section E below.

D i) A gearing sharing mechanism

4.45 In Section C, we outlined our theoretical objections to Ofwat's GSM in principle. In this Section, we have developed helpful suggestions for the application of a GSM, should Ofwat want to apply a mechanism in AMP7. This April Submission incorporates and recommends a progressive GSM, which could operate on a tiered and marginal basis, where gearing exceeds 70%. This mechanism would increase the incentives to de-gear.

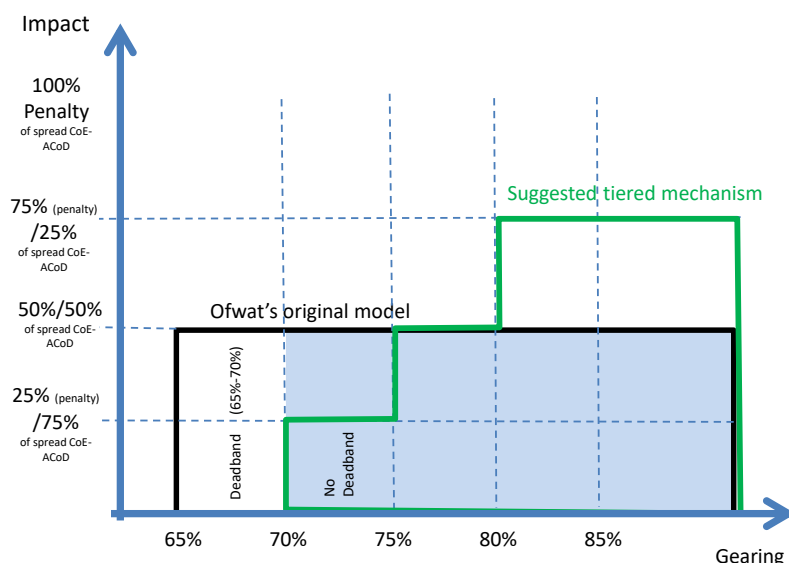
Suggestion for a tiered GSM

4.46 Ofwat's original GSM model featured the 50% / 50% sharing of a penalty calculated as the spread between the notional nominal cost of equity and the nominal cost of debt, for all gearing above 70% (with the penalty calculated for gearing above 65% - the *deadband*). We believe that by adding additional tiers to a GSM, Ofwat's ability to incentivise lower gearing would increase, on the following basis:

- **Gearing above 80%:** We suggest that the marginal penalty is increased, such that 75% of the penalty passes to benefit customers, for the difference between actual nominal cost of debt and notional nominal cost of equity;
- **Gearing between 75% and 80%:** We suggest that the marginal penalty is unchanged, such that 50% of the penalty passes to benefit customers, for the difference between actual nominal cost of debt and notional nominal cost of equity; and
- **Gearing between 70% and 75%:** We suggest that the marginal penalty is decreased, such that 25% of the penalty passes to benefit customers, for the difference between actual nominal cost of debt and notional nominal cost of equity (with the penalty calculated for gearing above 70%).

4.47 We have removed the deadband concept, such that the penalty is only generated for gearing over 70%, rather than being calculated effectively from a 65% gearing level. The figure below demonstrates this suggestion, alongside Ofwat's original model.

Figure 3: Suggested tiers within a GSM



Source: Thames Water.

- 4.48 Further, a GSM could be calculated on a yearly basis, as in Ofwat's original model; while the customer share of penalty to be applied in AMP8 could be ringfenced for use in the best interests of customers. We would consult with our customers to understand their views on the most impactful way to further their interests.
- 4.49 In our response to Ofwat's 'Back in Balance' consultation, we disagreed with the use of the actual cost of debt within the penalty calculation, because its use would penalise a company which manages its debt in a more efficient way than an equivalent company with less efficient debt costs (a more efficient company with lower debt costs would attract a higher penalty). While we have retained Ofwat's approach in our suggested tiered mechanism we would encourage Ofwat to consider changing this calculation to avoid penalising efficient companies.

Merits of changing to tiers within a GSM

- 4.50 We believe that tiers within a GSM could strengthen Ofwat's powers to incentivise lower gearing at Thames Water, in customers' interests. Further, we also believe that adding tiers to a GSM is a more reasonable and fair approach, providing a clear incentive to de-gear to address concerns around financial resilience, in a more proportionate way that efficiently reflects the transitional costs of adjusting capital structure:
- **Incentive properties:** We propose to reduce gearing to 77.7% by the end of AMP7. The suggested tiered GSM features a reduced marginal impact below 75% gearing⁵⁶. This creates a greater incentive to stretch de-gearing below 75%, if such de-gearing becomes possible. The graduated steps in our suggested mechanism provide a reasonable transition glidepath to a lower gearing level.
Equally, with an increasing marginal impact at 80% and above, we would be even further disincentivised from raising gearing during AMP7;

⁵⁶ We adopt a tipping point of 75% in our tiered mechanism on the grounds that this corresponds to the maximum Class A debt gearing level allowed under our protective financial covenants. We consider that this creates an appropriate benchmark, given the amount of debt that investors and ratings agencies consider is sustainable by the group before contractual subordination features (i.e. those associated with our Class B debt) are needed to support financial resilience and credit ratings.



- **Furthering customer interests:** Customers benefit more from the incentive properties of intermediate stepping points, which encourages a realistic level of degearing over a five year period, while retaining equivalent sharing for the element of gearing over 75% (and a greater benefit above 80%); and
- **More reasonable and fair approach:** Given the decrease in risk implied by lower gearing, we believe that it is reasonable and fair to expect a reduction in the marginal impact rate paid by shareholders, when they de-gear. Our approach has been developed to take into account the scale of degearing required to meet Ofwat's 70% threshold, which would require an additional £1.8bn of equity in the business, at a time of considerable uncertainty in the equity markets for utilities given the risks of re-nationalisation.

- 4.51 This GSM would replace the mechanism to share the benefits of outperformance on the cost of new debt which we included in our September Business Plan.
- 4.52 We have incorporated this tiered GSM into our April Submission. We would like to engage with Ofwat to discuss this mechanism and how our tiered GSM could work in practice.

Maintaining our commitment to de-gear

- 4.53 We maintain our commitment to significantly de-gear. As in our September Business Plan, we intend to reduce gearing by injecting cash equivalent to c. 4.5% of RCV by the end of AMP7, with the cash raised by shareholders outside the regulatory ring fence, through issuance of debt via a holding company (Holdco).
- 4.54 We have been investing in our operation. Therefore, we will enter AMP7 with higher gearing than in our September Business Plan (80.7%, compared to 79.1% in our September Business Plan), mainly driven by an increase in investment to better serve our customers. Our closing AMP7 gearing will still reduce compared to the current position, but this will be raised slightly compared to the September Business Plan (77.7%, compared to 76.2% in our September Business Plan).
- 4.55 We have a clear intention to de-gear Thames Water. We will be de-gearing by £250m in April 2019, through Holdco proceeds already raised. Then we plan further de-gearing by c.£220m in year 5 of AMP6 and c.£380m subsequently over AMP7.
- 4.56 When taking into account the refinancing needs of Holdco over this period, c. £1,100m of further Holdco debt issuance is required. This is a significant quantum of Holdco debt issuance, and clearly, execution risk is increased.
- 4.57 While this is challenging, we have considered the practical issues associated with raising such debt and believe it to be achievable. We will explore the possibilities of stretching our de-gearing beyond these planned levels, aiming towards the mid-70s.
- 4.58 As discussed above, we believe that the tiered GSM incentivises de-gearing, specifically through a reduction in marginal penalty below the 75% gearing level. This is appropriate for our current gearing position and incentivises further de-gearing.

Further simplification of our corporate structure

- 4.59 Continuing our drive to improve transparency and simplify our corporate structure, we are in the process of reducing the c. £1.97bn intercompany loan, that exists between the regulated entity, Thames Water Utilities Ltd (TWUL) and its immediate holding company, Thames Water Utilities Holding Ltd (TWUHL). We have already secured the funding and actioned plans to decrease the balance of the intercompany loan by c. £250m in April 2019.



- 4.60 We currently expect to deliver our de-gearing through the reduction of the intercompany loan – by the end of AMP7 we plan to reduce the loan by c.£850m. The specific amounts and timing of such reduction will be determined by market conditions, among other factors.
- 4.61 As we continue on the long term path of reducing leverage, we will consider options to further reduce the intercompany loan.

D ii) Distributions and executive pay policies

Distributions policy

- 4.62 We are targeting an average net base dividend yield of 2.2% of TWUL's actual regulated equity over AMP7, equivalent to a net base dividend of £75.2m per year. This is significantly lower than the 5% stated by Ofwat as being a reasonable level for the base dividend yield. Our shareholders are fully supportive of our Board's decision to pay a lower dividend as we focus on our commitment to de-gear the business.
- 4.63 We have already substantially limited our dividend payouts in AMP6, as described in more detail in our Finance and Financeability Appendix⁵⁷. In the first three years of AMP6, our average dividend yield was the second lowest yield among the WASCs, and our dividends accounted for just 5.1% of total sector dividend payments, compared with our RCV contributing 18.6% to total sector RCV. Thames is one of only 2 WASCs to have paid a dividend lower than Ofwat's 4% assumed dividend at PR14 in this period. In the last 3 years of AMP6 we have prioritised investment in the business to address operational challenges over dividend payments. As a result, our shareholders, which ultimately own Thames Water, will not receive any cash distributions during this period.
- 4.64 Our plan represents a continuation and formalisation of our approach to dividends in AMP6 into AMP7.
- 4.65 At the time of our September Business Plan, the Board had agreed the parameters of a new dividend policy, with the full support of shareholders, with the following key features:
- Payment of a proposed dividend should not impair short term liquidity or compliance with our covenants;
 - Payment of a proposed dividend should not impair the longer term financeability of the company's business;
 - Assessment of the impact that payment of the dividend may have on all stakeholders including employees, pension scheme members and customers;
 - Our financial performance, that underpins the opportunity to pay the dividend, is as a result of operational performance that meets the level required of a supplier of essential services; and
 - If a net dividend is declared above Ofwat's 5% dividend yield guidance, applied to Ofwat's notional company, the Board will consider whether the additional returns result from performance (including progress towards degearing) that has benefited customers and may therefore reasonably be applied to finance a dividend.
- 4.66 Under the Whole Business Securitisation structure, our financing arrangements include an extensive set of provisions which prohibit dividend payments in the event of a deterioration in

⁵⁷ TW-RR-A2: Finance and Financeability.



TWUL's financial performance, as well as other factors. The policy mirrors these provisions and also goes much further by explicitly including consideration of operational performance and impact on customers and other stakeholders.

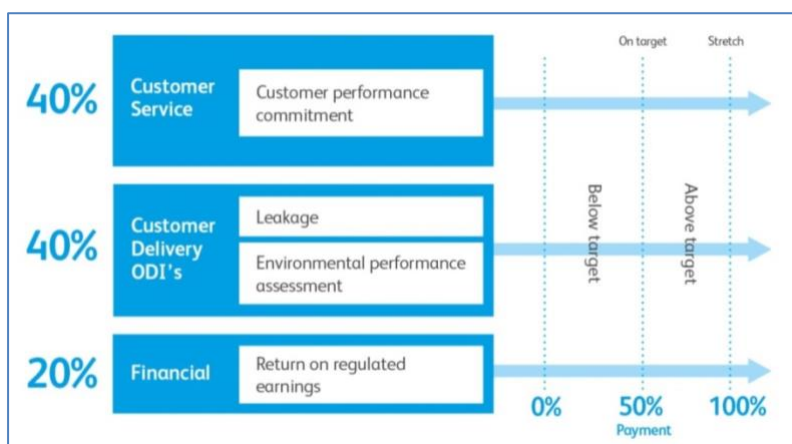
- 4.67 The dividend payments assumed in the plan will be subject to the Board's judgement. The Board will opine on whether the Company's financial and operational performance meets the level required of a supplier of essential services and may take that into account when considering any adjustments potentially made to the base dividend.
- 4.68 In this April Submission, we provide additional clarity on some of the factors which may cause our dividend to be different from the base level outlined in our plan. These include:
- The company either outperforming against or failing to deliver expected performance or obligations;
 - Unforeseen circumstances; or
 - A scenario where any such payment would be seriously detrimental to our financial resilience (including maintaining headroom under our covenants).
- 4.69 In assessing the impact of any dividend payments on customers the Board will consider both past performance on issues such as customer service and performance commitments and expected future performance on these issues as well as ensuring the company has the resources it needs to fulfil its obligations.
- 4.70 Any decision on dividend payments will ultimately be taken by our Board, which has a majority of Independent Non-Executive Directors, as described Section 5.
- 4.71 During AMP6, we have made substantial changes to our governance to reinforce the independence of TWUL, including the following changes which strengthen oversight of and governance around dividend payments:
- The separation of the chairmanships of TWUL and its holding company, with an Independent Chairman at TWUL;
 - Increasing the number of Independent Non-Executive Directors on the Board;
 - Reviewing the skillsets of the Directors, ensuring there is sufficient breadth of operational experience to allow Directors to challenge effectively on all issues;
 - Revising the dividend policy of TWUL to underline the independence of the TWUL Board when considering whether to declare a dividend payment; and
 - Refreshing the relationship between Holdco and TWUL by reviewing reserved matters to reinforce the appropriate degree of independence.
- 4.72 We have already taken significant action to strengthen the Board in line with our plans, with the appointment of three new Independent Non-Executive Directors since September 2018, with experience and skills in a range of relevant operational, financial and regulatory areas, as discussed in Section 5.
- 4.73 As a result of these appointments, as of 1 April we will be in a position where our Independent Non-Executive Directors are the largest group on the Board, our Independent Non-Executive Directors and Chairman constitute an absolute majority of the Board, and our independent Directors are fully equipped to evaluate the factors to be considered under our dividend policy.
- 4.74 Our Chairman intends to undertake a regular mapping of our Board members' experience and skills to ensure that they remain appropriate.

- 4.75 We note that only our Independent Non-Executive Directors vote on decisions regarding dividends.
- 4.76 When we pay dividends, we will be clear about their level, how they positively relate to delivery for customers, and which factors the Board has considered when making its assessment.
- 4.77 We will communicate any changes to our dividend policy to all stakeholders.

Executive pay policy

- 4.78 Similarly, we have reviewed and updated our policy for executive pay for the 2020-2025 period to address Ofwat's IAP feedback and to better reflect the expectations on dividends as set out in 'Putting the sector in balance'.
- 4.79 We recognise that executive and employee remuneration policy has to align with delivering for our customers and protecting the environment.
- 4.80 As such we are committed to meeting the expectations in relation to executive remuneration as set out in 'Putting the sector in balance'. We have made significant steps in this regard already specifically in relation to performance incentives.
- 4.81 Performance related pay, both long term and short term, make up between 60% and 70% of Thames Water executive manager's maximum total remuneration package. These incentives are designed to ensure that executive remuneration is directly linked to delivering outstanding customer outcomes, based on relevant stretching targets. The incentives are applied rigorously through good governance by the Remuneration Committee which has been strengthened in the last 12 months. We will continue to provide transparency through detailed and specific reporting in the annual performance report.
- 4.82 *Remuneration linked to performance for customers:* The Remuneration Committee is in the process of finalising the incentive structures for AMP7 as follows:
- The Long Term Incentive Plan (LTIP) for AMP7 includes 80% on delivery of customer related targets:
 - 40% on delivery of Customer Service target;
 - 40% on delivery of Customer Delivery (leakage and environmental performance) targets; and
 - The remaining 20% is for delivery of Return on Regulated Earnings (RORE) which is impacted by ODI's and supports financial resilience.

Figure 4: Proposed long term incentive plan structure (3 year targets, aligned to strategy plan)





- 4.83 *Stretching targets for delivery of great customer outcomes:* We are committed to ensuring that the targets set for performance related pay are stretching:
- The LTIP scheme for the first three years of AMP7 includes both target and stretch levels of performance;
 - Target will be set to deliver performance at or above the regulatory targets and would only result in payment of 50% of the maximum incentive payment;
 - Stretch targets are set to deliver performance above regulated targets. Only performance above target would result in payment of more than 50% of incentive maximum payment;
 - In all cases the Remuneration Committee has a specific discretion to reduce in whole or in part any payment where there has been any significant failure against customer, health and safety, asset health or regulatory targets; and
 - These principles on setting of targets will also be applied to Annual Management Bonus incentives in AMP7.
- 4.84 *Rigorous governance in the application of pay policy:* Monitoring of performance is undertaken by the Remuneration Committee. All incentives for Board executives are approved by the Board. Governance continues to be improved:
- Thames Water has recently appointed Jill Shedden as chair of the Remuneration Committee. Jill is a very experienced FTSE100 HR Director who will challenge the Company to deliver on the commitments outlined in the pay policy, linking pay and performance for customers and other stakeholders;
 - The Remuneration Committee has a majority of independent non-executive directors; and
 - The Committee is actively considering any elements of the pay policy which are not consistent with the 2018 UK Governance Code, including Workforce engagement with the Board, executive pension alignment with workforce and withholding periods for incentives. Details of any changes to policy will be included in the annual report.
- 4.85 *Providing transparency on executive pay:* We believe that executive pay should be transparent and performance related pay should demonstrate a clear and substantial link to exceptional delivery for customers. This will be the foundation of our approach during the period 2020/2025. This is delivered through our annual report which fully complies with the requirements of the UK Corporate Governance Code, as follows:
- Details of the executive remuneration policy and how this relates to business strategy;
 - Detailed explanations of the incentive schemes, identifying how they link to performance.
 - Targets for future years are included, a practice we will continue in to AMP7;
 - The activities of the Remuneration Committee are published in the annual accounts; and
 - Our current pay policy is detailed in the 2017/18 annual performance report. Once the elements of the 2020 to 2025 policy have been approved by the Remuneration Committee we are committed to publishing this in the annual pay report.



D iii) Fair return

- 4.86 We have considered what is an appropriate and fair return for AMP7, taking into account the latest market evidence, Ofwat's 'early view'⁵⁸ and regulatory precedent, including recent reports issued by the UK Regulators Network ("UKRN")⁵⁹.
- 4.87 The allowed cost of capital is a pivotal element of the price control, impacting bills and financeability. If set too high, customer bills will be higher than they need to be, if set too low it could put at risk the investment necessary to deliver the standards of service which customers expect.
- 4.88 In its methodology, Ofwat refers to the WACC as an 'early view' and acknowledges that it will "*revisit the cost of capital for draft and final determinations in 2019*". This was important, as the PR19 final determination will be decided two years after its December 2017 'early view', which we used in our September Business Plan. Clearly, there are many factors which might impact the appropriate estimate for the WACC for AMP7 and these will need to be taken into account fully in the final allowance.
- 4.89 As set out in our September Business Plan, we think that these factors can be broken down into four categories:
- WACC methodology, including impact of the UKRN report published in March 2018;
 - Market evidence, taking into account changes in key variables such as risk-free rate, inflation indices and forecasts, share prices (which impact on beta estimates) and additional evidence of the total market return;
 - PR19 methodology – how changes announced since December 2017, principally relating to 'Back in Balance', impact on the perception of risk in the sector and hence affect its cost of capital; and
 - Risk and reward balance, reflecting how Ofwat calibrates its allowed cost of capital with the range of incentive mechanisms it sets as part of the overall determination.
- 4.90 In order for us to better understand the potential impacts of these factors, we commissioned Frontier Economics to review in detail the potential changes to WACC methodology and what this may mean for the WACC estimate in the context of the latest market evidence.
- 4.91 Frontier Economics' report, which is appended to this April Submission⁶⁰, indicates that changes in how the WACC should be estimated could add around 30 basis points to the original WACC set out in Ofwat's 'early view'. Movements related to changes in market rates are less significant, netting out to an additional six basis points at the time of Frontier Economics' review.
- 4.92 Frontier Economics' report highlights two significant issues relating to how the WACC should be estimated which constitute the key drivers for the difference to Ofwat's 'early view'. The first relates to estimation of the total market return (TMR), which was commented upon within the UKRN report (published after Ofwat's 'early view'). In its estimation, Ofwat placed greater weight on current market evidence than recommended in the UKRN report. Taking a range of evidence using long-run historic averages from the UKRN Report, historical market data and the latest Credit Suisse Global Investment Returns Yearbook, Frontier Economics estimates a TMR in the

⁵⁸ Ofwat, Delivering Water 2020: Our final methodology for the 2019 price review (December 2017), Chapter 10, page 172.

⁵⁹ Including the UKRN report "Estimating the cost of capital for implementation of price controls by UK Regulators", March 2018.

⁶⁰ TW-RR-A5: Cost of Capital for PR19: Frontier Economics report for Thames Water.



range of 5.94% to 6.5% (on an RPI-stripped basis) for AMP7, from which it selects a central point estimate of 6.22% on a real, RPI-stripped basis.

- 4.93 On cost of debt, Frontier Economics reviewed the 15 basis point reduction to the allowed cost of new debt (often called the 'halo effect') which Ofwat intends to apply to reflect expected outperformance by water companies of its benchmark cost of debt indices. Frontier Economics' cost of debt estimate does not include a halo effect, as it does not find evidence of this impact.
- 4.94 Frontier Economics also considered the UKRN's recommendations and follow up work undertaken by Ofgem and Indepen⁶¹ to review how equity betas are estimated, noting options to consider alternative estimation techniques, time horizons and conversion to a notional structure. Its analysis indicates that the estimation techniques are similar and that the evidence is broadly consistent with Ofwat's asset beta estimate of 0.37.
- 4.95 Market data appears not to have moved significantly in net terms since Ofwat's 'early view' in December 2017. Frontier Economics notes that the risk-free rate has edged lower, but the impact of this on the WACC is more than offset by upward movements in debt indices. Significant uncertainties remain regarding the macro-economic environment, Brexit and its impact on the water sector, and we can expect further changes in the months ahead of the PR19 final determinations.
- 4.96 While Frontier Economics' work points to a WACC of around 2.7% for the appointed business, on a real RPI-stripped basis, we continue to use Ofwat's early view in April Submission data tables, ahead of further Ofwat analysis, as follows:
- Appointed WACC of 2.4% (stated on a real, RPI-stripped basis); and
 - Wholesale WACC of 2.3% (stated on a real, RPI-stripped basis), for all of the wholesale price controls.
- 4.97 We request Ofwat to take into account during its draft and final determinations, the factors highlighted by Frontier Economics' work concerning the WACC estimation, alongside the wider implications from the calibration of the overall risk and return package within Ofwat's final allowance for the fair return. Our Fair Return Appendix provides a more detailed description of Frontier Economics' work⁶².

E Additional delivery risk and financeability

- 4.98 Finally, we have assessed the financial resilience and financeability of our revised position in this Submission, together with an overall appraisal of the overall risk and reward balance as estimated through RORE analysis.

E i) Risk and reward balance (RORE)

- 4.99 Following development of our ODIs as described in Section 2, we see an increased RORE upside associated with ODIs from +0.47% in our September plan to +0.83% within this Submission. The ODI downside remains at -1.53%, in line with September.

⁶¹ Ofgem Beta Study – RIIO-2 Main Report, Indepen, December 2018.

⁶² TW-RR-A3: WACC: case for increased uncertainty.



- 4.100 Our RORE range for ODIs sits within Ofwat's overall guidance of plus or minus 1% – 3%, but the reward upside (of less than 1%) takes into account our customers' limited appetite for ODI rewards. Our RORE profile is asymmetrical, reflecting the penalty only nature of many of our financial ODIs with a 2.36% span between P10 and P90 outcomes (up from 2% in September).
- 4.101 The overall balance of risk and reward also considers variations on wholesale totex, residential retail costs and financing costs, in addition to service focused ODIs, C-MEX and D-MEX. Our plan demonstrates an overall RORE range of +1.73% to -3.83% based on combined upside (P10) and downside (P90) scenarios.
- 4.102 The table below breaks out the RORE impact of our upside and downside scenarios for the appointed business in aggregate.

Table 6: Risk scenario impacts on RORE

% impact on regulated equity	P90 (downside)	P10 (upside)
Revenue	0.00%	0.00%
Totex	-1.48%	0.62%
Residential retail costs	-0.23%	0.07%
ODIs	-1.53%	0.83%
D-MeX	-0.04%	0.02%
C-MeX	-0.34%	-0.02%
Financing	-0.21%	0.21%
Total	-3.83%	1.73%

Source: Ofwat financial model. Numbers may not add due to rounding.

- 4.103 The full results of our assessment are set out in the Finance and Financeability Appendix⁶³, within which we also show how the RORE analysis breaks out across the price controls.

E ii) Financial resilience

- 4.104 We have considered the financial resilience of our April Submission over a ten year period, given a range of plausible, but severe downside scenarios appropriate to the business. In doing so, we have adopted an approach consistent with our yearly statements of long term viability (LTVS) and with our September Business Plan. We have concluded that we will be financially resilient over the ten year assessment period, even if these downsides were to crystallise⁶⁴.
- 4.105 We have also considered Ofwat's prescribed downside scenarios which it expects companies to consider in their assessment of financial resilience, as set out in 'Back in Balance'.
- 4.106 The full results of our assessment are set out in the Finance and Financeability Appendix⁶³, within which we also address the additional questions raised by Ofwat in its IAP, considering our plan to maintain our current credit rating, the impact of the GSM the impact of our gearing levels,

⁶³ TW-RR-A2: Finance and Financeability.

⁶⁴ Our assessment period of 10 years remains unchanged. As our audited financial accounts for the year ending 31 March 2018 are only available in July when we publish our 2018/19 annual report, we have assumed the forward looking assessment period to be from 1 April 2019 to 31 March 2028. In doing so, we ensure consistency of methodology with other Long Term Viability Statements contained in past and upcoming annual reports.



requirements to refinance subordinated debt and the effect of capital raised elsewhere in the corporate group.

E iii) Financeability

- 4.107 In adopting Ofwat's 'early view' on the WACC we have tested our April plan to ensure that it is financeable on both the actual and Ofwat's notional capital structure. Using an actual capital structure our plan generates financial ratios consistent with an investment grade credit rating of BBB+/Baa1, which is consistent with our current rating for Standard & Poor's (Class A debt) and Moody's (corporate family rating) respectively. This rating is two notches above minimum investment grade expectations of our licence and helps ensure that we can efficiently access capital and liquidity on an ongoing basis.
- 4.108 On a notional balance sheet basis our key ratios fall short of those required to achieve our targeted BBB+/Baa1 rating. Instead we think that the notional company would meet ratios consistent with BBB/Baa2. The plan is therefore financeable on a notional basis – with one notch of headroom above the lowest investment grade – but at a level one notch below our targeted credit rating which would be more consistent with the components of the allowed cost of capital. One consequence of meeting a rating of BBB/Baa2 would be to incur a premium of 25–40bp on cost of debt that would erode notional equity returns (all else being equal).
- 4.109 We have considered what mitigation options are available to enable the notional company to meet ratios consistent with the targeted BBB+. One option would be to use the totex levers, however we reject that on the grounds of affordability. Use of the levers would increase customer bills – which we consider unnecessary given that our plan is financeable at BBB+/Baa1 on an actual balance sheet basis. One critical differentiator between the two capital structures is the one notch uplift allowed for the beneficial effect of securitisation which is not available to the notional company. This corresponds to a 15–24bp increase in the cost of capital for the notional company.
- 4.110 We engaged expert financial advisors to provide advice and opinion to our Board in relation to financeability of the company⁶⁵. It independently verified the conclusions we have made above on the financeability of our plan on the basis of both the actual and notional capital structure.
- 4.111 In the Finance and Financeability Appendix⁶⁶, we set out the full results of our assessment, highlighting where we have updated our approach to take into account Ofwat's IAP and what external evidence and assurance we have drawn from to form our conclusions.

⁶⁵ TW-RR-A7: Evercore paper.

⁶⁶ TW-RR-A2: Finance and Financeability.



Section 5

Confidence and Assurance

A Introduction

- 5.1 We need to invest in the future of water and waste in London and the Thames Valley, for the sake of current and future customers. Our Executive Team, Board and Shareholders stand by our Business Plan and the additional challenge outlined in this submission. We have also recognised the importance of working with our partners in the Customer Challenge Group. We look to Ofwat to support this investment.
- 5.2 This chapter outlines Thames' approach to the good governance that has been employed to ensure that our customers and Ofwat can have confidence in the Business Plan and additional challenge. We discuss:
- **Section B:** Governance;
 - **Section C:** Board and Executive assurance;
 - **Section D:** Third party assurance;
 - **Section E:** Customer engagement;
 - **Section F:** CCG engagement; and
 - **Section G:** Wider stakeholder engagement.

B Governance

- 5.3 We recognise that, as an essential service provider, our Board should be held to a high standard and be able to demonstrate it acts in the public interest as well as being accountable to the company's customers, regulators, employees, shareholders and other stakeholders for the performance of the company. It provides strategic oversight, constructive challenge and support to the Executive team and reviews the delivery of outcomes for our customers on a regular basis.
- 5.4 Our Board continues to be committed to adhering to best-in-class standards of corporate governance and is looking forward to reviewing Ofwat's revised "Board Leadership, Transparency and Governance principles". We were the first water company to accept that these principles should be enshrined in our licence and expect to agree to the revised licence terms as well. We continue to aim to show cross sector leadership in the governance of infrastructure and essential service providers.
- 5.5 Since September 2018, we have continued with our ongoing refresh of members of our Board. We have appointed three new Independent Non-Executive Directors with specific areas of expertise that will strengthen the Board's oversight of our delivery for customers: Jill Shedden joined the Board to strengthen its human resources expertise and has replaced Ian Marchant as the chair of the Remuneration Committee. Catherine Lynn brings with her extensive experience in customer service and will chair the Board's Customer Service Committee. David



Waboso has wide-ranging experience of the delivery of large infrastructure and digital projects and will chair the Health, Safety and Environment Committee. Dame Deirdre Hutton, Ed Richards and Lorraine Baldry are stepping down as Non-Executive Directors from the Board after eight, nine and five years of service respectively.

- 5.6 In addition, John Morea has joined the Board as Non-Executive Director, with experience from the power and transport sectors, while Guy Lambert left the Board as a Non-Executive Director after four years. Nick Fincham is also stepping down from the Board as Executive Director from 31 March 2019.
- 5.7 These changes mean that, as of 31 March 2019, the Board will consist of 13 Directors: an Independent Chairman, two Executive Directors (the Chief Executive Officer and Chief Financial Officer), four Non-Executive Directors and six Independent Non-Executive Directors. This puts us in a position where our independent Directors (including the Chairman) are in the majority on the Board, as well as having skill sets that align with those required to drive outcomes for our customers.
- 5.8 The Board continues to be committed to taking an active lead in the company's drive to improve trust and confidence and the actions already taken further underpin that commitment. There is more to do as we continue in our aim of demonstrating cross sector leadership in this vital area.

C Board and Executive assurance

- 5.9 The full Board has continued to have ownership of changes to the positions taken in this Submission in response to Ofwat's IAP. The Executive Committee recommended the Submission, our Customer Challenge Group have challenged the April Submission and we have used our corporate three of lines of defence⁶⁷ approach to assure the April Submission, as shown in the figure below.

Figure 5: April Submission governance structure



Source: Thames Water Business Plan Programme.

⁶⁷ Three lines of defence is a risk management approach used to improve decision making as well the accuracy and reliability of information reported and used within the business.



5.10 The Board has exercised ownership and challenge by:

- Fully considering Ofwat's initial assessment of our September Business Plan and how this aligns with the outcomes of our customer preferences research to identify to the areas of concern for our customers and stakeholders, within the service we provide to them, now and in the future;
- Taking full ownership of the company's corporate strategy, including continuation of our focus on building a resilient business and services;
- Continuing a rigorous schedule of in-depth engagement with the company's Board and Executive team going well beyond the business as usual frequency of meetings. This has enabled full oversight and challenge of the Executive Committee's updating and stretching of the April Submission; and
- Taking full ownership of the assurance approach and assurance plan for the resubmission. This included making sure that learnings from the past were applied and providing further challenge to the Executive team to ensure a thorough assurance framework was in place again.

5.11 The Board has convened six times since September 2018. It has analysed the business plans of other water and wastewater companies, challenging the ambition and understanding any deliverability risks associated with the April Submission, while maintaining a customer centred approach.

5.12 The Executive Committee has made recommendations and driven development of the Submission by:

- Reviewing and learning from the business plans of other water and wastewater companies;
- Fully analysing Ofwat's assessment of our September Business Plan;
- Holding weekly in-depth Business Planning sessions with the Business Plan programme team;
- Commissioning additional customer research to gain further understanding of their preferences and priorities; and
- Ensuring that any efficiency challenges are fully understood and how stretching our ambition and driving innovation creates both opportunity and risk over deliverability.

5.13 We have also continued to draw on the experience and expertise of both our Customer Challenge Group to challenge and guide changes for our Submission. The CCG monitors whether we are meeting our commitments, reporting properly on our progress and if we are fully considering customers in our future plans.

5.14 Further, in applying our company's risk management three lines of defence approach, we have used a variety of assurance activities. This includes a broad mix of assurance providers to ensure at all stages that we have the right mix of technical, analytical and subject matter experts to cover the key aspects of the April Submission.



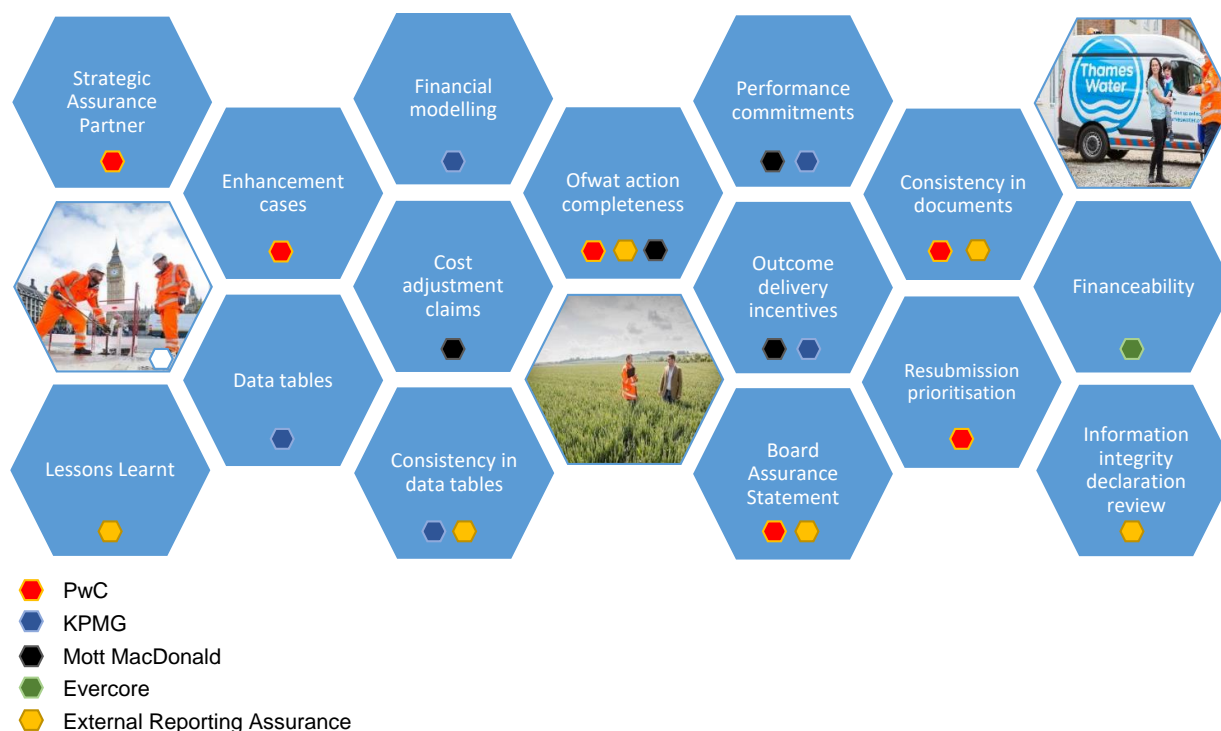
- 5.15 Throughout all aspects of assurance, from technical assurance over solutions and performance commitments to data integrity assurance, we have consistently challenged against the following core principles that:
- Customer preferences remain central to the performance outcomes of our future plans;
 - We will deliver efficiency and value for money for customers;
 - We are making changes with a full understanding of the impact on the plan (including any potential compliance risk to our legal, regulatory or statutory obligations);
 - Any deliverability risks resulting from plan changes are adequately addressed; and
 - The plan has evolved in full consideration of the challenges made.
- 5.16 All components of our April Submission have been formally signed-off and approval using our information integrity declarations form process. We use these to ensure that we have considered the preferences of our customers, guidance and direction from Ofwat as well as applying diligent and thorough processes to make statements and give information that is trustworthy and can be relied upon. The Board has created and signed an assurance statement in support of this submission⁶⁸.

D Third party assurance

- 5.17 We have re-commissioned PwC as our Strategic Assurance Partner, to challenge and review our assurance decision making and delivery in support of delivering a “best in class” assurance activity within our independent assurance programme to ensure:
- Accuracy and reliability of information;
 - Compliance with Ofwat requirements and a customer led approach; and
 - Technical challenge to help us understand the strengths of our Submission.
- 5.18 We commissioned four specialist external independent assurance partners, in addition to our External Reporting Assurance team. This ensured that we had access to the expertise required to build trust and confidence with our Board on the Submission and quality of our response documents to Ofwat.

⁶⁸ TW-CA-A1: Board Assurance Statement.

Figure 6: Independent assurance activities and the topic areas each independent assurer covered



Source: Thames Water.

5.19 Ofwat requested specifically that:

“Assurance must be provided where requested as part of an action; companies must indicate the assurance that they have provided for all data table changes; where CCG have provided assurance and where additional assurance has been undertaken it is deemed appropriate.”⁶⁹

5.20 We have tracked all Ofwat required actions within our Business Plan Programme. A full set of information integrity declarations were returned against each action response. Specialist external independent assurance was also undertaken where necessary; for example, where the action related to financeability. In addition, our External Reporting Assurance Team reviewed the completeness and quality of the information integrity declaration process. Full details of the action responses and any specific assurance undertaken are noted in the Ofwat action tracker⁶⁹.

5.21 To ensure the integrity, completeness, accuracy and reliability of our updated set of data tables, we embedded a full set of information integrity declarations. We commissioned KPMG as our data tables Assurance Partner. They reviewed our updated tables for validity, with approved changes of the Board, numerical accuracy and consistency across tables. In addition and in conjunction with KPMG, we developed a trend and correlations assessment tool to help to identify potential inaccuracies in our updated tables. All observations were addressed prior to submission.

5.22 Full details on the full scope and conclusions of our independent assurance activities are available in our supporting Independent Assurance Summary document⁷⁰.

⁶⁹ TW-RS2: Ofwat Action Tracker.

⁷⁰ TW-CA-A2: Independent Assurance Summary.



E Customer engagement

- 5.23 We undertook extensive customer engagement ahead of the September 2018 Business Plan submission, with feedback from almost 1 million customers⁷¹ helping to shape our Business Plan. Since September, we have continued to engage with our customers as part of our ongoing efforts to improve customer service, collecting feedback from around a further 182,000 customers⁷². We have also undertaken a number of targeted pieces of customer research to inform revisions to our business plan ahead of the April Submission.
- 5.24 Consultation on the revised Water Resource Management Plan took place during October and November 2018. We engaged with more than 1,000 customers and other stakeholders on our Plan including conversations in potentially affected communities in Lechlade, Abingdon and North East London⁷³. We have also spoken to a robust qualitative sample of 173 customers on our plans for investment to ensure water supply resilience in North East London⁷⁴ and on drought resilience and protecting chalk streams⁷⁵.
- 5.25 Targeted qualitative customer research with 140 household customers (48 of which took part in pilot sessions) has helped us to further understand views around PCs and ODIs; specifically: i) the mains bursts target; ii) the incentive rate for per capita consumption of water; iii) using incentives to deal with future issues and uncertainties; iv) the overall package of incentives; v) the role of enhanced incentive rates; as well as vi) issues connected to supply interruptions⁷⁶.
- 5.26 Following changes to bill profiles and service levels, we have also tested the acceptability and affordability of our Submission with customers. We have seen continued strong customer support for our plan: a large and increased majority of our customers find the AMP7 plan acceptable (87%) and affordable (81%)⁷⁷. Customers also find our AMP8 plan to be acceptable (86%) and affordable (84%)⁷⁸. This compares favourably to the testing of our September Business Plan, where customers found our AMP7 plan to be acceptable (67%) and affordable (68%); while our AMP8 was found to be acceptable (60%) and affordable (60%).
- 5.27 We asked customers what percentage acceptability (and affordability) our Submission should achieve in order for us to go ahead with our plans. Customers thought we should reach at least 69% acceptability and 67% affordability⁷⁹ to implement this business plan, which has been achieved⁸⁰. We believe this approach to setting acceptability and affordability benchmarks is not only robust, but also supported by our CCG⁸¹.
- 5.28 The findings from our most recent engagement have been triangulated with existing customer evidence and summarised in our evolving What Customers Want document⁸², which continues

⁷¹ CSD01717: PR19 What Customers Want triangulation methodology; page 46.

⁷² TW-CSE-A1: What Customers Want v13 (final), page 2.

⁷³ TW-CSE-A3: CC04-WRMP further consultation.

⁷⁴ TW-CSE-A3: CR67 NE London Resilience.

⁷⁵ TW-CSE-A3: CR69 Drought Resilience and Chalk Streams.

⁷⁶ TW-CSE-A3: CR70 PCs and ODIs 2019.

⁷⁷ TW-CSE-A3: CR71 Final Acceptability Testing 2019.

⁷⁸ TW-CSE-A3: CR71 Final Acceptability Testing 2019.

⁷⁹ TW-CSE-A3: CR71 Final Acceptability Testing 2019.

⁸⁰ When we tested the September Business Plan, customers thought we should reach at least 63% acceptability and 62% affordability to implement this business plan, which was achieved for our AMP7 plan.

⁸¹ TW-CA-A4: CCG Report.

⁸² TW-CSE-A1: What Customers Want v13 (final).



to be the foundation for our business planning. Stemming from this, elsewhere in this document, we explain how we have reflected customer views in our Submission, including in the design of PCs and ODIs⁸³.

- 5.29 Our customer engagement and how we have reflected the findings in our Submission has been reviewed and challenged by our CCG⁸⁴, with CCG members continuing to attend customer research sessions and to carefully scrutinise research materials and research findings.
- 5.30 Customer engagement for business planning will continue after the April Submission. For example, we are about to commence a small face-to-face customer survey to complement the online survey we undertook in March 2019 to understand the acceptability and affordability of our April Submission. Time constraints meant we were unable to conduct a face-to-face survey among customers with low or no access to the internet, a gap we would like to fill because we believe it is important that all our research continues to be inclusive of all customer groups.
- 5.31 We set quotas and applied weighting to ensure our online survey was representative of our customer base (in terms of age, gender, socio-economic grade, ethnicity, disability, metered/unmetered, combined service/wastewater-only and if wastewater-only, the water-only company served by). In addition, when we conducted acceptability testing in July 2018 we saw no difference in the acceptability and affordability figures for the online and face-to-face survey samples. The face-to-face sample also made up a relatively small 9%⁸⁵ of the overall survey sample. For these reasons, we are confident we will not see significant differences in findings between the surveys, and that if there were to be differences they would not materially alter the overall acceptability and affordability of our April Submission.
- 5.32 Time pressures have also meant that while the recent AMP8 acceptability testing has provided a useful contribution to our understanding of customer preferences, our ability to have a detailed and high-quality conversation with customers has been constrained. Therefore, we plan to undertake further in-depth research in Spring 2019 about options for AMP8 bill profiles and service levels.
- 5.33 We also plan to consult our customers on our suggested amended Gearing Sharing Mechanism. As with all our customer engagement, this continuing research will be assured by our CCG and conducted in line with social research best practice.
- 5.34 We will continue to implement NPS as our core customer metric. This involves enhancing our brand (relationship) NPS as well as implementing transactional NPS at key touchpoints in our customer journeys. This insight will be a fundamental part of our inner and outer feedback loop process, which will provide actionable insight to drive improvements for customers.
- 5.35 In addition, we are rolling out a programme of Customer Immersion to our leaders. This is building on the success of two immersion sessions with our Executive and Customer Experience leadership teams on the topic of 'no water', with Board directors also participating in a session on leakage. The programme will in time encompass all our senior managers. Customer immersions give our leaders an opportunity to hear from customers about what matters to them in their own words.

⁸³ TW-RS1: Building a better future: Response to Ofwat's IAP, Section 2 Outcomes, D i) Supplementary customer research; page 22.

⁸⁴ TW-CA-A4: CCG Report.

⁸⁵ TW-CSE-A3: CR71 Final Acceptability Testing 2019.



F CCG engagement

- 5.36 Following the September Business Plan, we have continued to engage with our CCG on a regular basis. Between 3 September 2018 and 31 January 2019, we have held:
- 5 Chair mid-meets to agree forward plans and review CCG challenges;
 - 1 Customer Engagement subgroup (CESG) which continued to scrutinise our customer research and our approach to affordability and vulnerability;
 - 3 Finance and Business Planning sub-groups (F&BPSG) which conducted detailed reviews on topics such as long-term resilience, assurance, TTT transition, risk and return, and financeability; and
 - 5 main CCG meetings, including our current performance monitoring.
- 5.37 Outside of the core meetings, a number of CCG members have attended our Annual Stakeholder Forum, where our CCG Chair, Anne Heal presented. CCG members, including Anne Heal, also attended stakeholder gathering at our Oakroom on 6 December 2018 where they had a chance to meet with a number of trustees from the Thames Water Charity Trust Fund. More recently, Anne recorded a message for our annual managers' conference in February 2019.
- 5.38 Throughout Autumn 2018, we had working sessions with Anne where we reviewed the existing CCG challenges from September 2018. Through continuous refinement and by providing further supplementary information, we have reduced the number of key challenges to 15. The remaining challenges include our leakage ambition and its deliverability; challenge on whether Thames is 'acting local' enough; through to challenges on customer participation / co-creation. We have continued to address these and other remaining challenges through deep dive sessions, such as the session in January 2019 on vulnerability and affordability issues. The CCG were pleased to see the progress being made, both on affordability and priority services. The CCG expect Thames to provide regular updates on progress, the next of which is currently scheduled for May 2019. The full list of the detailed CCG challenges and the current position can be found in CCG Challenge log⁸⁶.
- 5.39 Since the IAP, we held a number of sessions with CCG to share our reasoning for removing some of the Performance Commitments and introducing new Performance Commitments where required. Through March, we held three conference calls to: step through each of our performance commitments and discuss the CCG's specific comments and challenges from September; to explain why we have maintained some of the original definitions and targets from the September Business Plan; and to explain our reasoning where we propose to make changes. Detailed comments on specific performance commitments and our responses can be found in the CCG Challenge log⁸⁶.
- 5.40 We have completed further quantitative customer engagement to test the acceptability and affordability of both our revised AMP7 and AMP8 plans and bill profiles. Our Customer Challenge Group has carefully reviewed and critiqued our acceptability and affordability testing materials. Additional customer research on the North East London Resilience programme was carried out and the CCG had the opportunity to comment on the research material and to attend focus groups. The full report was shared with the CCG and is submitted⁸⁷.

⁸⁶ TW-CA-A4: CCG Report.

⁸⁷ TW-CSE-A3: CR67: North East London Resilience.



- 5.41 CCG members have continued to attend and observe our customer research focus groups.
- 5.42 Since the IAP feedback on 31 January 2019, we have held:
- 2 Chair mid-meets, 2 Customer Engagement subgroups (CESG) that have looked in detail at our recent and upcoming customer research;
 - 2 Finance and Business Planning sub groups (F&BPSG) that have explored our proposed April Submission;
 - 2 F&BP SG conference calls where we shared details of our assurance framework and had the opportunity to discuss it with our assurance partners
 - 2 main CCG meetings; and
 - Four conference calls, with a focus on PCs and ODIs, to address existing CCG concerns, as well as our April Submission, in order to support the development of a CCG report.
- 5.43 The CCG has produced an independent report⁸⁸, which describes its view of our April Submission. We have worked extensively with the CCG to address its challenges and this is reflected within the April Submission. Full details of the challenges we have addressed are provided in the CCG report challenge log⁸⁶.

G Wider stakeholder engagement

- 5.44 In addition to the comprehensive programme of customer engagement that underpins our April Submission, we have engaged a wide range of stakeholders. This has included both working with stakeholders to ensure the plan meets their needs and explaining the merits of the plan. Currently, we are explaining to stakeholders the changes we are making in this April Submission, and at the end of April will provide to Ofwat:
- A summary of stakeholder engagement that has supported the preparation of this April Submission;
 - An explanation of how our April Submission aligns with stakeholders' priorities; and
 - Letters from stakeholders who are writing to us to provide their views on our plan.

⁸⁸ TW-CA-A3: CCG Report.



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Section 6

Conclusion

A Introduction

- 6.1 We need to invest in the future of Water and Wastewater in London and the Thames Valley, for the sake of current and future customers. Our September Business Plan signalled our desire to invest and ensure that we correctly set the future direction of our operation – while still maintaining the average annual combined household bill unchanged over the next 5 years.
- 6.2 We have listened to the feedback from Ofwat's IAP and additional engagement with our customers, since the creation of our September Business Plan. While we have some concerns about elements of the IAP, this April Submission features a number of significant additional stretch challenges that are in the interests of our customers. This additional challenge needs to be viewed in the context of the additional risk that we will take on to deliver this plan. We commit ourselves to engaging further with Ofwat over the remainder of the PR19 regulatory review, to explain the merits of this April Submission.
- 6.3 In this Section, we conclude:
- **Section B:** Our Submission - Investment in the future, with additional stretch;
 - **Section C:** Significant impact on financial resilience, efficiency and customers' bills; and
 - **Section D:** Our commitment to work with Ofwat over the remainder of the PR19 review.

B Our Submission: Investment in the future, with additional stretch

- 6.4 We have listened to the feedback in Ofwat's IAP and to our customers in this April Submission, building on our September Business Plan. We continue to press for the needs of investing in our operation, to ensure that current and future customers reap the rewards of a more secure operation.
- 6.5 The table below demonstrates the additional challenge that we are taking on AMP7 outcomes, costs and risk/return.

**Table 7: Summary of additional challenge in this April Submission, compared with the September Business Plan**

	September Business Plan	April Submission
AVERAGE ANNUAL COMBINED BILLS	Flat average household bills from AMP6; Increasing bills in AMP8	£5 or 1.3% reduction by the end of AMP7; Flat average household bills in AMP8
Priority Services Register (Number of customers benefitting)	400,000	410,000 (Ofwat's benchmark)
KEY OUTCOMES		
Pollutions	18% reduction	30% reduction
Internal sewer flooding	15% reduction	20% reduction
Supply interruptions	6% reduction	20% reduction
Leakage	606MI/d to 509MI/d 15% reduction	636MI/d to 509MI/d 20% reduction
<i>Cost of improved outcomes</i>		No additional costs requested
COSTS		
Average unit base opex efficiency per customer ⁸⁹	13.6% reduction	22.5% reduction
Totex	£11.7bn	£10.9bn (£10.65bn + c.£0.25bn Uncertainty Mechanism)
FAIR BALANCE		
Gearing Sharing	-	A Gearing Sharing Mechanism
CUSTOMER ACCEPTABILITY	67%	87%

Source: Thames Water.

- 6.6 Compared with our September Business Plan, our April Submission includes more stretching performance targets and significantly lower costs. While we consider that we have been careful to ensure that the April Submission can still be delivered, it inevitably comes with more delivery risk, as we are aiming to deliver even more stretching performance with lower levels of financial and operational resources. While the business retains the necessary financial resources to deal with adverse shocks, the additional delivery risk - if it materialises - could make it harder for us to invest in innovation and to tackle the longer-term challenges we face.

C Significant impact on financial resilience, efficiency and customers' bills

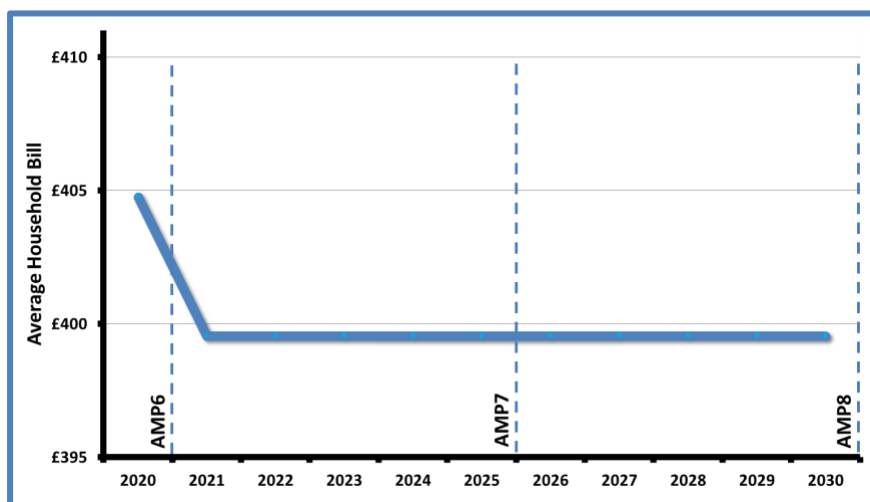
- 6.7 In addition to the additional stretch on relevant PCs that we described above, we are taking a significantly additional challenge for the 5 year period ahead, as a result of these measures in this April Submission:

⁸⁹ Normalised for power and rates; measured per property, from AMP6 to AMP7.



- **Significantly higher cost efficiency challenge:** Our September Business Plan featured a 13.6% unit base cost efficiency between AMP6 and AMP7⁹⁰. The additional base and enhancement cost challenges described in this April Submission increase these efficiencies, such that we will reduce our unit base costs by 22.5% between AMP6 and AMP7⁹⁰; and
- **Reducing customers' bills:** Our September Business Plan featured a commitment not to increase the average bill from AMP6 into AMP7. As a result of the additional challenge featured in this April Submission, we will be able to deliver a small but significant 1.3% reduction in average annual combined household bills by the end of AMP7, as shown in the figure below. Further, through careful analysis of our longer term plans, we expect that there will be no increase in average annual combined household bills in real terms for the following 5 year period, up until 2029/30.

Figure 7: Projection of reduced average annual combined household bills for Thames Water customers in AMP7 and AMP8 ⁹¹



Source: Thames Water.

D Our commitment to work with Ofwat over the remainder of the PR19 review

6.8 We have outlined a number of areas of concern with the IAP. However, we also recognise the challenge given to us by Ofwat, to further explain our plans for AMP7, and we hope that this Submission, with its significant appendices build upon the September Business Plan and further explain the need for future investment and cost allowances. We recognise that we are at a relatively early stage in the PR19 regulatory review and therefore we commit ourselves to working with Ofwat over the remainder of the PR19 regulatory review, to explain our plans and to provide further analysis and justification, as required.

6.9 We look forward to engaging with Ofwat ahead of the draft determination in July 2019.

⁹⁰ Normalised for power and rates; measured per property, from AMP6 to AMP7.

⁹¹ Represents our current forecast of average annual combined bills (pre-rebate) for AMP8, in 2019/20 prices, subject to PR24 regulatory review.

