PR14 reconciliation commentary

Thames Water – PR14 reconciliation commentary

1 Purpose of this document

1.1 This document sets out our approach to the PR14 reconciliation required at the end of the 2015-20 price control, taking into account past and forecast performance relative to our targets, and the various incentive mechanisms in place during AMP6. We have structured this document as follows:

- **Section 2** provides an explanation of the PR14 reconciliation and incentive mechanisms;
- **Section 3** provides a summary of our performance;
- **Section 4** outlines the drivers of our past performance;
- **Section 5** describes the measures we have taken to address the drivers of performance;
- **Section 6** provides a summary of our performance against our performance commitments ('PCs') over AMP6;
- **Section 7** outlines our proposed reconciliation adjustments;
- **Section 8** provides a summary; and
- **Appendix I** provides the technical data table commentary that accompanied our PR14 reconciliation submission.

2 PR14 reconciliation and incentive mechanisms

1.2 Our plan for the next regulatory period is informed by how we have performed – and expect to perform – during the current five year regulatory period (2015-2020). As part of our PR19 Plan we must take account of our past and forecast performance relative to our targets and the various incentive mechanisms in place during AMP6. We also consider those factors from PR09 which were not reconciled at PR14 and are, therefore, adjusted for at PR19.

1.3 Our PR14 reconciliation process enables us to identify what adjustments we need to make as a result of our 2015-2020 performance when setting our bills for 2020-2025. These are:

1) Outcome delivery incentives (ODIs), which provide companies with rewards for achieving stretching performance targets and compensate customers if performance is below performance targets; we publish an annual summary of our performance in table 3A of our combined 2017/18 Annual Report and Annual Performance Report including penalties and rewards earned and forecast for the end of AMP6.
2) Wholesale total expenditure (totex) sharing, where company over and underperformance is shared with customers; our cumulative totex for 2015-2018 is reported in table 4B of our combined 2017/18 Annual Report and Annual Performance Report.

3) Wholesale revenue forecasting incentive mechanism (WRFIM), which provides financial incentives for companies to provide accurate forecasts, and ensures under and over-recovery is reconciled.

4) PR09 reconciliation (blind year adjustments); further adjustments for performance against PR09 incentive mechanisms, including the Capital Incentive Scheme (CIS), where we reconcile actual 2014-15 performance.

5) Household retail, where the total revenue allowance is adjusted for actual customer numbers.

6) 2010-15 further adjustments (SC9 pass back of underspend).

7) Land sales; adjusting our Regulatory Capital Value ('RCV') to share any proceeds from disposals of interest in land equally with customers.

8) Water trading; incentive payments for new water trades that start in the 2010-15 period.

9) SIM; our measure of customer satisfaction.

3 Summary of our performance over AMP6

1.4 We are committed to delivering the outcomes and performance our customers and stakeholders expect from us. Overall, we have delivered on the majority of those expectations, however, in a number of areas, our performance has fallen short.

1.5 In particular, our performance on leakage, trunk mains bursts, pollution incidents, and sewer flooding, combined with other critical operational failures such as major information system outages brought home to us that we could not deliver our AMP6 commitments or meet customers' long-term needs without a substantial overhaul of how we deliver as a business.

1.6 In order to address poor performance and operational failures we have undertaken a review of our company strategy, our delivery plans and our internal governance. This review focussed on our past performance, both failures and successes, with the objective of understanding the underlying factors of our performance, which we discuss in Section 4.

4 Drivers of our past performance

1.7 Through our review, we recognised that there were a number of areas of our business that were performing well from which we could draw useful lessons and examples of good practice. Notable examples include:

- **Health & Safety -** Delivery of our services and commitments relies on the well-being of our people. We have had three years of outstanding health and safety performance and introduced a number of award winning initiatives to support our employees. This has resulted in a 33% reduction in lost time injuries across our entire supply chain and our Chief Health & Safety Officer being recognised by IOSH as one of the Top 15 most influential leaders – the only one from the utility sector.
- **Energy Generation -** Our commitment to maximising the value of the resources we treat has seen a significant increase in the amount of renewable energy we generate making us the largest generator of electricity from sludge in the UK.
- **Water Quality -** We have consistently achieved our water quality target this AMP and proportionately have the lowest number of water quality complaints across the industry. Having said that, we are not complacent and, with our commitment to continually improving water quality, we have developed a transformational improvement programme which has been agreed with the DWI.
- **Community Projects and Engagement -** During the AMP we have worked with many organisations to provide community access to a number of our assets. Most notably we worked with the London Wildlife Trust to provide access to the 211 hectare Walthamstow Wetlands which is now recognised as Europe's largest urban wetland reserve and it is anticipated will attract 250,000 visitors a year.

1.8 There have also been a number of areas where we have not performed well. These areas have been the main focus of review. Examination of operational issues

concluded that there were a number of cross-cutting factors underlying those areas where we did not perform well. These were:

- Our operating model did not easily support collaborative working, which at times resulted in a disjointed approach to resolving customer issues.
- We had become over reliant on external capabilities and this reduced our ability to prevent issues from arising and resolve them quickly.
- Our internal governance and monitoring processes did not always provide us with the information we needed to understand our performance and quickly respond to issues.
- In a number of circumstances, our ability to identify and understand risk was insufficient to predict asset failures and insulate our customers from impact of those failures.
- Our data systems had become dispersed and hence there was insufficient integrated insight about our operations and our customers, which was inhibiting our ability to provide consistently excellent services to our customers.

1.9 The impact of the operational issues and cross-cutting factors identified can be seen in the following specific examples, where we have not delivered the service our customers expect.

Leakage

1.10 In 2016-17, we missed our leakage performance commitment for the first time in over ten years. The scale of the shortfall and delayed reporting on the issue to our Board meant the size of the failure was such that we would not be able to fully recover our leakage position for some years. As a result of these failures, Ofwat found us in breach of the Water Industry Act 1991, and our instrument of appointment.

1.11 Our review of our leakage performance found that there were three clear factors that had driven our failure to meet our target:

- We had limited visibility of what was driving our leakage reduction and whether our activities and investment were effective.
- We had no clear governance over the leakage activities being delivered by our Infrastructure Alliance, including the mix and level of activities.
- We were incurring higher than planned unit costs meaning we were delivering less than we expected for the investment we were making.

Security of Supply Index (SOSI) and Environmental Performance Assessment (EPA)

1.12 We did not meet our SOSI target of 100% in 2016-17 and 2017-18. This was primarily the result of not meeting our leakage target.

1.13 Following our 2016-17 SOSI shortfall, we forecast that we would meet our SOSI target with a small surplus and we planned on that basis. However, we were not prepared for the impact of the cold weather that occurred at the end of February 2018 and the subsequent thaw, which significantly increased demand. Given the timing of the cold weather, it was impossible to recover our SOSI position by the end of March 2018 and as a result we did not meet our 2017-18 SOSI target. The failure

to meet SOSI also affected our performance against the EPA and we were only able to achieve a 2-star rating in both 2016-17 and 2017-18.

1.14 Our review found:

- We did not have a full systems understanding of the impact of individual issues on other performance areas.
- Our monitoring of our performance against the EPA was not frequent enough to enable us to take corrective action more quickly.
- We did not have sufficiently worked up mitigating options that we could deploy quickly to address SOSI shortfalls.

Trunk main bursts

1.15 There were eight high profile bursts in London between October and December 2016, which caused significant disruption to our customers and the general public.

1.16 The root cause analysis of our trunk main burst performance, including how we respond to bursts, showed:

- We needed to improve our understanding of both risk and the consequences of asset failure, to inform a long-term asset replacement strategy.
- Limited data on assets was inhibiting our ability to predict asset failure and given the difficulty of collecting data from trunk mains, we needed to investigate innovative ways of measuring asset condition.
- There was insufficient governance in a number of areas including monitoring of trunk mains and associated assets, and limited direct line of sight between risk governance of our network operations and corporate risk governance.
- Our ability to respond as an integrated business across our internal teams and supply chain partners fell short of the expectations of our customers.

Information System outages

1.17 During 2016 and 2017, we suffered from a series of major information system failures, which disrupted our operations and affected our ability to deliver services to customers. The review of the outages showed we were over reliant on our external capability to design, deliver, operate and maintain our information systems. This limited our ability to prevent and respond quickly to issues, and also resulted in a lack of internal insight and operational capability in our core information systems and networks.

Pollution incidents

1.18 In March 2017, we received a fine for repeated illegal discharges of sewage between 2012 and 2014. The pollution incidents, which occurred at multiple sites in Oxfordshire, Buckinghamshire, and Berkshire, caused significant damage to the environment.

1.19 Our performance against number of category 1-3 pollution incidents since 2013 has improved by over 50% and we have taken significant steps to address our failures.

1.20 We have experienced some major incidents in AMP6, which relate predominantly to unconsented discharges from our sewage treatment works.

1.21 We have considered the findings from the EA's and our own investigations of pollution incidents and incorporated these into the strategic review to ensure it addressed the underlying factors which allowed repeated, avoidable pollution incidents to occur.

1.22 At that time, the lessons were:

- Our company culture did not consistently value or promote the prevention of pollution incidents compared to other requirements such as sewage treatment works compliance, and health and safety.
- Our governance structure did not always support the escalation of risks and issues through the management structure to allow early action to be taken.
- Our ability to understand and respond to data from our assets affected our ability to respond to issues quickly before they escalated.

Sewer flooding

1.23 Flooding from our sewers is distressing and unpleasant for our customers and we are dedicated to reducing the number of properties at risk of flooding and the number of properties affected by sewer flooding each year.

1.24 In 2015-16, we fell significantly short of our commitment to reduce the number of sewer flooding incidents and there were 1,403 internal sewer flooding incidents compared to our target of 1,168. Root cause analysis of our performance revealed:

- We had insufficient insight into the cause of flooding caused by inconsistent field data collection;
- We needed to improve our understanding of how our assets affected the risk of customers flooding to improve our proactive solutions; and
- Our commercial arrangements with our supply chain where not sufficiently incentivising our partners to respond to customers at high risk of sewer flooding in order to prevent a service failure.

Freeze-thaw event

1.25 At the end of February 2018, the UK experienced a sustained period of sub-zero temperatures, 'the Beast from the East', which was then followed by a very fast thaw in early March 2018. The speed of the thaw had an extreme impact on both our network and our customers' pipes with a significant amount of leakage occurring as temperatures rose rapidly above zero.

1.26 Our customers were severely affected because of the large number of bursts (particularly on customer-side pipes). In particular, between 2 and 3 March 2018, demand increased by an average of 270 Ml/d, 70% of which was caused by supply pipe leakage.

1.27 The freeze-thaw event occurred just as we were starting to mobilise the recommendations from our strategic review. Learnings from our subsequent internal investigation and Ofwat's review of the event have been used to validate the findings and recommendations from our strategic review. The key lessons from the event include:

- Our identification and understanding of risk was too focussed on historic experience – because the impact on our operations of the rapid thaw was unprecedented, our models did not predict the scale of the impact on our customers.
- Our event plans were not sufficiently developed in some areas to enable us to respond quickly to the unexpected impact of the thaw on demand, for example we did not have pre-agreed bottle water sites.
- Our operating model and commercial arrangements affected our ability to bring in additional out-of-hours resources to respond to the incident as it accelerated.
- Insufficient real-time information about our network inhibited our ability to identify and respond to new operational issues quickly, and prevented us from providing our customers with up to date information about what was happening.
- Limited information about our customers made it harder to identify affected customers and provide them with proactive communications and support. For example, we were unable to identify all of our customers who needed additional support accessing alternative water supplies, and we know affected customers were not always aware of the availability of free bottled water.

5 Measures to address drivers of our past performance

1.28 This section sets out the measures we have put in place to address the key drivers of performance, and in particular to improve those areas where we have performed poorly during AMP6. It focuses on key areas of focus including our:

- operating model;
- over reliance on external capabilities;
- governance and monitoring;
- understanding of and management of risk; and
- Data quality to provide insight of our operations and customers.

Our operating model

1.29 Our review of incidents such as trunk main bursts and customer service incidents revealed to us that our operating model was inhibiting our ability to provide seamless end to end journeys for our customers thereby affecting the level of services our customers experienced. We have, therefore, implemented a new operating structure that moves away from the four separate business units we had in place and to a

series of integrated functions that work collaboratively together to deliver the best outcomes for our customers.

1.30 While incidents and emergencies such as flooding, trunk mains bursts, and supply demand events are focused on the delivery of one service, customers are often affected by the loss of both clean water and wastewater services. Our “One Thames” model is, therefore, designed to support us in a delivering an integrated approach to providing services.

1.31 We launched our new operating structure in April 2018 and we have already taken significant steps to deliver greater integration between key customer delivery areas of the business. For example, we have:

- Migrated 15 customer contact functions into a single area to allow us to integrate all of our customer channels and a more coherent customer experience.
- Moved all of our operational functions under one Chief Operating Officer to enable to us to improve our understanding of our entire operation and take a more consistent approach to operating and maintaining our assets, and simplifying the interface with customer service.
- Established a new integrated business planning and asset management function to improve how we make short and long-term decisions about our operations and investment in assets.
- Built a new IT team with responsibility for all of our systems architecture, programme delivery of system changes, and operation of the systems. This includes taking responsibility of our £150m project to deliver a new customer relationship management and billing system.

1.32 While we are still in the process of embedding the new ways of working, we are already seeing benefits from trialling greater integration between our water and wastewater operational teams when we respond to incidents. On trunk mains bursts, for example, we started deploying both clean water and wastewater operational teams in 2017.

1.33 This allows our clean water team to focus on fixing the issue with our network, while our wastewater team supports the response to the flooding and is also able to engage directly with affected customers – providing them the information and support they need.

1.34 In October 2017, a trunk main burst at Euston Station showed how well this approach worked in practice and as a result there were no customer complaints about the incident and we received positive feedback about our response.

Reliance on external capabilities

1.35 During 2016 and 2017, we suffered from a series of major information system failures, which severely impacted both service and operational delivery. Reviews of these failures revealed that as an organisation we were too reliant on buying in external support in areas where we should have been growing strong, internal

capabilities. This affected our ability to manage and resolve these issues quickly for the benefit of our customers.

1.36 Through our reorganisation, we are strengthening our engineering, scientific, digital and service capabilities and we have already appointed a Chief Engineer and Chief Scientist to support the strengthening of in-house technical planning, modelling and engineering skills.

1.37 We have overhauled our Technology Transformation Alliance to reduce the scale of activities we outsource. We are now insourcing about 60% of all of our IT activities, including systems architecture, IT programme delivery, service management, and help desk support.

1.38 To ensure we have the right skills and systems to deliver our operations, we are hiring 150 permanent IT professionals and have committed to investing £60m to modernise our IT infrastructure by the end of AMP6.

1.39 We have already started to see a material improvement in our IT performance and we have seen the number of priority incidents reducing by two-thirds and significant reductions in the time it takes to resolve an incident. We have also completed the first stage of our migration from traditional mainframe systems to the cloud to enhance our IT resilience.

Our governance and monitoring

1.40 We have undertaken a complete overhaul of our internal governance as well as the governance of our alliances to ensure:

- complete transparency of monthly performance across all our commitments;
- risks are identified and escalated quickly through the management structure;
- we have greater control of our supply chain and the work they deliver for us; and
- we have greater visibility of our supply chain and their performance.

1.41 We have already seen improvements as a result of these changes, for example, stronger performance management of our Infrastructure Alliance has resulted in a 20% decrease in the unit cost from our partners, and we are expecting a further 10% decrease later this AMP, with further efficiencies targeted for AMP7.

1.42 As well as strengthening the internal governance processes and monitoring, we have also overhauled our corporate governance. Our performance failures combined with the complexity of our financial arrangements has undermined customers' trust and confidence in us, and as a result, we undertook a review of our corporate governance arrangements.

1.43 Supported by our new majority shareholders (whose interests of long-term, sustainable returns align with our customers' long-term needs), and led by our new independent Chair, we have reviewed four key governance areas:

- Transparency;
- Board composition and independence;
- Dividend policy; and

- Executive remuneration.

1.44 As a result of the review, we have either completed or are in the final stages of:

- Closing our two companies registered in the Cayman Islands. While they don't provide us with a tax benefit, as is commonly thought, customers and stakeholders have told us that their existence reduces their trust in us.
- Reviewing other legacy, dormant companies and where possible winding them up as quickly as we reasonably can.
- Improving the level of transparency in our annual reports so that our customers and stakeholders have a clearer understanding of our performance and how we operate as a company. Additionally, as our leakage performance is of particular performance to our customers, we have launched a microsite to report on our progress against our leakage recovery plan.
- Reviewing the composition of our Board and its skills to ensure it has strong independence and sufficient breadth of operational experience to allow effective challenge on all issues.

1.45 We have changed our dividend policy to reinforce the independence of the TWUL Board from that of our holding company and we have revised our Executive remuneration policy to directly align Executive pay with our performance against the commitments we have made to our customers.

Our understanding and management of risk

1.46 The freeze-thaw event in March 2018 highlighted to us the need to identify, understand and prepare for low probability/high impact events in a way that we have not previously needed to, as well as the need for more investment in resilience systems and assets.

1.47 The gaps in our risk management capability have not just affected our operational performance but also underpin our customer service performance, and this can be seen in our inconsistent performance on complaints handling, customer satisfaction metrics and SIM.

1.48 To address this gap, we are strengthening our internal scientific, technical, engineering and modelling capability to improve how we identify and understand risk, as well as increasing and improving the operational data we collect as business. This will provide us with clearer information on what is happening across our operations, and we will use this insight to inform the actions we need to take as a business for the benefit of our customers.

1.49 We are also developing new tools to help identify where our assets are at high risk of failure. For example, we are developing new ways to improve our knowledge of the condition of trunk mains and their risk of failure. To do this we are developing an industry-leading test rig which will help us work with suppliers and the wider industry in developing new asset condition assessment tools. These tools will, in the future, support how we identify the areas of our network at highest risk of failure and allow us to target investment accordingly.

Data quality to provide insight of our operations and customers

1.50 Our AMP6 performance has driven home to us how we need to increase and improve the quality of the data we collect, in order to be able to deliver excellent services to our customers in a way that meets individual customers' needs. In particular, our performance on SIM and customer satisfaction metrics, trunk mains, sewer flooding; and in responding to incidents has revealed the importance of developing real-time visibility of our operations, and holding up to date, accurate information about our customers' requirements.

1.51 Improving customer, operational and environmental data across the entire organisation is a strategic priority for our business and it is a critical enabler of the performance our customers expect of us in AMP7. We are already taking steps to address this and are:

- Transforming our core systems to provide the foundations for our AMP7 digital transformation plans. This includes delivering in AMP6: improved HR, supply chain management, and assessment management systems. This has also included the migration our mainframe to a more resilient, efficient cloud platform.
- Building digital (software) development capability to rapidly release new, innovative digital tools and applications across the company that are tailored to our needs. For example, we are developing a new work force management platform and website to allow us to access and analyse real-time data and connect engineers directly with our customers where needed.
- Continuing the development of our critical 'data factory' products to provide the foundation of a real-time data platform.

1.52 In summary, we have and are continuing to implement a number of measures to address the drivers of our performance identified in AMP6. The impact of what we have implemented and those lessons we have addressed has been incorporated into our forecasted performance, and also incorporated in our proposed PR14 reconciliation adjustments outlined in greater detail below.

6 Performance against our commitments over AMP6

1.53 Customers expect us to be transparent. Here we set out our current service performance and how we expect to perform against our targets up to 2020.

1.54 Overall, we are forecasting to meet or exceed 80% of our 53 performance commitments by the final year of AMP6.

1.55 Those commitments where we have or are forecasting a performance level that fails to meet or exceeds our committed performance level has resulted in an adjustment as part of our PR14 reconciliation submission. Our performance commitments that result in an adjustment include:

Table 1: Performance that results in an adjustment to our PR14 reconciliation

Performance commitment	2015/16 actual	2016/17 actual	2017/18 actual	2018/19 forecast	2019/20 forecast	2019/20 CPL[1]	Reward/ penalty (£m, 12/13 price base)
WB1: Asset health water infrastructure	Marginal	Marginal	Marginal	Marginal	Marginal	Stable	-23.3750
WB5: Average hours lost supply per property served, due to interruptions > 4 hours	0.12	0.12	0.21	0.13	0.13	0.13	-4.4200
WB6: Security of Supply Index - Ofwat KPI	100	99	97	100	100	100	-9.0600
WB8: Ml/d of sites made resilient to future extreme rainfall events	-	-	4	772	1,016	1,015	0.0000
WC2: Leakage (Ml/d)	642	677	695	672	606	606	-48.6000
SB4: Number of internal flooding incidents, excluding those due to overloaded sewers (SFOC)	1,403	1,214	1,062	1040	1,040	1,085	-5.9350
SC3: Sewage treatment works discharge compliance (%)	99.13	98.28	99.43	98.58	99.16	100	-3.4605
SC7: Modelled reduction in properties affected by odour (number of properties)	-	1,305	1,980	6,822	6,822	6,593	0.2578

Source: Thames Water APR table 3A for years 1-3 and data table APP5 for years 4-5 of AMP6
Note (1): CPL = committed performance level, the target established at PR14 or subsequently revised through a corrigenda

1.56 Reports on our PR14 reconciliation submission were presented to our Audit, Risk and Reporting Committee ("ARRC") on 19 June 2018 and to our full Board on 27 June 2018. Delegated authority for final approval was given at the 27 June 2018 Board meeting to Nick Land, Chair of ARRC (Independent Non-Executive Director); Nick Fincham, Director of Strategy & Regulation (Executive Director); and Kenton Bradbury (Non-Executive Director).

1.57 Our performance commitment and outcome delivery incentive progress has been, and will continue to be, reviewed with our CCG on a quarterly basis. This includes a review of under and outperformance and our assessment of root causes and mitigating actions.

[1] CPL = committed performance level as defined in the PR14 Final Determination or subsequent corrigenda. For more detail please refer to our website: https://www.thameswater.co.uk/-/media/Site-Content/Thames-Water/Corporate/AboutUs/Our-strategies-and-plans/our-five-year-plan/Supporting-information/Update-on-outcome-delivery-incentives-May-2018.pdf

1.58 Given where we are, particularly on leakage, with significant penalties in a number of areas, the CCG understand that we will be reimbursing our customers for their foregone benefit of a better service. They have also challenged us to make it clearer to our customers what the overall impact of our performance will mean for them and their bills.

7 Proposed PR14 reconciliation adjustments

1.59 Overall, the PR14 adjustments result in a reduction to customer bills. The PR14 proposed adjustments in revenues and RCV equates to an approximate reduction of about £4 on the average annual household combined bill overall.

1.60 We have engaged with our customers on our proposed PR14 reconciliation adjustment, and they have told us:

- Having a fair and accountable adjustment system is seen to be good for our image, showing that we care more about our customers than making a profit.
- The bill adjustment system is widely supported and felt to be a fair way of operating.
- This particular reduction is well received by most, who welcome any reduction off their bill – particularly in the context of a widely held belief that utility bills are always rising.
- However, the reduction is considered by some so small as to be almost negligible – some believe the money would be better spent invested back into our business.

1.61 Overall, 73% of the customers we surveyed support this bill adjustment being made.

1.62 We have submitted to Ofwat, and published on our website[2], the tables listed in the 'source' column in Table 2, our summary of proposed adjustments which form our PR14 reconciliation submission.

[2] https://www.thameswater.co.uk/sitecore/content/Corporate/Corporate/About-us/our-investors/annual-results; under 'current reports'

Table 2 Summary of proposed PR14 reconciliation adjustments

Wholesale water (2017/18 FYA CPIH deflated)

Incentive mechanism	Source	Revenue adjustment £m	RCV adjustment £m
Outcome delivery incentives	App27	(98.07)	0.00
Wholesale total expenditure (totex) reconciliation	WS15	(8.80)	258.15
Wholesale revenue forecasting incentive mechanism (WRFIM)	WS13	55.11	n/a
Water trading incentives	WS17	0.77	n/a
PR09 2010-15 reconciliation	App25	(1.29)	17.75
Land disposals	App9	n/a	(32.00)
PR09 CIS reconciliation	App25	n/a	(96.59)
Total Wholesale Water adjustments		**(52.28)**	**147.31**

Wholesale waste (excluding TTT) (2017/18 FYA CPIH deflated)

Incentive mechanism	Source	Revenue adjustment £m	RCV adjustment £m
Outcome delivery incentives	App27	(10.49)	0.00
Wholesale total expenditure (totex) reconciliation	WWS15	2.91	113.38
Wholesale revenue forecasting incentive mechanism (WRFIM)	WWS13	17.83	n/a
PR09 2010-15 reconciliation	App25	(24.20)	(7.72)
Land disposals	App9	n/a	(21.03)
PR09 CIS reconciliation	App25	n/a	(182.01)
Total Wholesale Waste adjustments		**(13.95)**	**(97.39)**

Retail Household (2017/18 FYA CPIH deflated)

Incentive mechanism	Source	Revenue adjustment £m	RCV adjustment £m
Household retail	R9	(1.82)	n/a
PR14 SIM incentive	R10	(87.52)	n/a
Total Household Retail adjustments		**(89.34)**	**0**

Source: Thames Water

8 Summary and further information

1.64 Overall we have made progress against the majority of our commitments during this current regulatory period, however, we know that there is more to do to enable us to deliver for the rest of the period and enable us to recover in areas where we have not performed.

1.65 We will continue to report our performance to customers for the remainder of this regulatory period and going forward – being clear about the reasons for our performance and our future plans.

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July 2018

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1 Assurance approach

This section provides an overview of the approach that we have used to assure data tables for the PR14 reconciliation submission.

Our assurance framework

We started by completing a risk assessment of the PR14 reconciliation submission, considering aspects such as customer impact, financial impact, complexity and historical errors. The PR14 reconciliation submission was assessed as "High Risk" which has influenced our core assurance activities.

Using our company wide assurance approach, as defined in our "Statement of Risks, Strengths and Weaknesses for 2017/18" and "Final Assurance Plans", we have implemented multiple lines of defence[3] for this submission.

Furthermore, within our publication "Our 2020-25 Business Plan Reporting Risk and Assurance" we have provided additional details about our assurance approach to mitigate our reporting risks in respect of all our submissions supporting our PR19 business plan. The following table sets out these specific assurance plans:

Table 3 – core assurance activities

Risk category	Check on quality of information	Internal review	Executive and senior manager review	Oversight functions	Customer and stakeholder involvement	External assurance (KPMG)
Accessibility					✓	
Timeliness	✓	✓	✓		✓	
Accuracy	✓	✓	✓	✓		✓
Reliability	✓	✓	✓	✓		✓
Completeness	✓	✓	✓	✓		✓
Transparency	✓	✓	✓	✓	✓	✓

Overall, for this submission we implemented a combination of:

- **Methodology statements and approval:** our standardised methodology statement template is used across our business areas to ensure effective recording of any compliance requirements, the sources of data, calculation processes, assumptions used, any judgements made; change control, version control and the final outputs. Each methodology statement includes the name of author, approval by a reviewer, and approval by a senior accountable manager;
- **Internal information integrity declarations (IIDs):** our IIDs are internal checklists required from information preparers, internal reviewers and senior accountable managers. These provide evidence over the validation checks undertaken by internal staff. They include, for example, accuracy and completeness of information, adherence to Ofwat and other relevant guidance, consistent application of the methodology statement, consistency with other

[3] The "three lines of defence" model is used in risk management frameworks to ensure efficient and effective coordination across risk and control processes, providing assurance that they are operating as intended

information (including other data tables, previous submissions etc.), and undertaking of internal processes/controls.

- **Internal reviews by senior managers and Executive:** in addition to our IIDs accountable Heads of Department, where relevant, and members of our Executive Team have also reviewed, challenged and signed-off each element of our submission;
- **Updates to our Customer Challenge Group:** updates on our assurance approach and progress on our assurance activities have been provided directly to our Customer Challenge Group Finance & Business Planning sub-committee. This includes, but is not limited to, forecasts regarding our ODI position at the end of 2019/20.
- **External reviews by our external assurance partners KPMG:** our third line of defence through KPMG is explained in greater detail in our External Assurance Approach.
- **Engagement with our full Board:** updates have been provided to our full Board on progress of this submission. The Board requested that during the Directors Deep Dive on Assurance that they take a final look in detail at the submission. They also approved delegation of the final approval to a combination of Executive and Non-Executive Directors (including an Independent Non-Executive Director) prior to submission. Further details provided in a later section on Final Sign-off and Approval.
- **Director Deep Dive review of submission:** on 11 July 2018 our Senior Independent Non-Executive Director and Chair of the Audit, Risk & Reporting Committee led a Director Deep Dive process on behalf of the Board, which was supported by other Non-Executive and Executive Directors. The session reviewed and challenged the submission and assurance activities undertaken. Updates to the supporting commentary and additional evidence were subsequently provided to satisfy them about the submission; and
- **Final 'Gateway' review:** two members of the Thames Water Senior Leadership Group completed two read through sessions across all elements of the submission. One on 10 July 2018 prior to the Director Deep Dive and a second session over 12 and 19 July 2018. This includes verifying that final versions are being sent and that all submission components are there.

Following scoping of our external assurance activity, KPMG formed a team consisting of both financial and non-financial auditors to cover all the elements of the PR14 reconciliation tables. Their assurance methodology covered:

- Methodology statements;
  - describing sources of data
  - outputs required
  - processes and systems
  - key judgements
- Controls and sign-offs;
- Accuracy;
- Consistency (policy, rules and guidance);
- Accountability; and
- Reliability of our ODI calculator.

Put simply, KPMG provided a combination of methodology, process and data assurance. The process element of their work provides assurance over earlier lines of defence.

With specific regards to App5 and App6, these were assessed as high risk and therefore the same set of thorough tests, or Agreed Upon Procedures, were performed against all lines and data items. The tests were developed and agreed between Thames Water and KPMG. Full details of the methodology and tests performed are contained within the KPMG report.

External Assurance Results

After each testing procedure, KPMG identified any actions for us to undertake before submission. A formal action was given where the action was expected to be processed prior to submission. If the action was not directly for the PR14 reconciliation submission, but as ongoing improvements, KPMG's findings were given the status of 'KPMG Recommendation'.

Prior to submission, we processed all KPMG actions. KPMG subsequently checked and confirmed closure of all the processed actions. The KPMG report concluded with a green RAG status for each table as shown in table 2.

Table 4 – external assurance results

Table Number	Table Name	RAG
App5	PR14 reconciliation – performance commitments	
App6	PR14 reconciliation – sub measures	
App9	Adjustments to RCV from disposals of interest in land	
App23	Inflation measures	
App25	PR14 reconciliation adjustments summary	
App27	PR14 reconciliation – financial outcome delivery incentives summary	
App31	Past performance	
WS13	PR14 wholesale revenue forecast incentive mechanism for the water service	
WS15	PR14 wholesale total expenditure outperformance sharing for the water service	
WWS13	PR14 wholesale revenue forecast incentive mechanism for the wastewater service	
WWS15	PR14 wholesale total expenditure outperformance sharing for the wastewater service	
R9	PR14 reconciliation of household retail revenue	
R10	PR14 service incentive mechanism	
Dmmy10	PR14 wholesale total expenditure outperformance sharing for the dummy price control	
Dmmy11	PR14 wholesale revenue forecast incentive mechanism for the dummy price control	

Full details of the external assurance conclusions are contained within the KPMG report, which is available upon request.

Final Sign-off and Approval

Reports on our PR14 Reconciliation submission were presented to our Audit, Risk and Reporting Committee (ARRC) on 19 June 2018 and to our full Board on 27 June 2018.

As the submission was due on or before 20 July 2018 (inclusive of a week extension granted to accommodate late amendments made by Ofwat to reconciliation data tables), subsequent to our

Board governance meetings, the reports were noted and delegated authority for final approval was given at the 27 June 2018 Board meeting to:

- Nick Land, Chair of ARRC [Independent Non-Executive Director];
- Nick Fincham, Director of Strategy & Regulation [Executive Director]; and
- Kenton Bradbury [Non-Executive Director].

Role of Customer Challenge Group in External Reporting

Our performance commitment and outcome delivery incentive progress is reviewed with our Customer Challenge Group on a quarterly basis. These reviews consider both under and outperformance as well as ensuring an understanding of root causes of performance issues and mitigating actions.

Calculation of ODIs

The method for calculating ODIs is published in a document called "Update on Delivery Incentives[4]" which is available on our company website.

The calculation of ODIs to populate tables is undertaken in our ODI calculator which is assured annually by KPMG, as part of their assurance over our Annual Performance Report, for accuracy of the calculations and for the data input and output into tables APP5 and APP6. The specific calculation steps for each ODI are explained in the performance commitment and sub-measures sections below.

ODI Claims and Reported Performance

The amount that is being claimed for each ODI is the same as the outperformance payment/underperformance penalty determined by our reported performance.

The forecast ODI value in table APP5 does not differ from the automatic operation of the end of AMP ODIs as set out in the PR14 final determination company-specific appendix.

The only exceptions to these two statements are:

- WC2 – Leakage, where we have removed the penalty collar for 2018/19 and 2019/20 and will apply the methodology for returning money for leakage and SoSI to customers as part of the settlement relating the Ofwat investigation into our leakage performance[5];
- SC9 – Reducing the amount of phosphorus entering rivers to help improve aquatic plant and wildlife, where the target and ODI incentive rates have been reset via the corrigenda. We are now reporting to the new value set under the corrigenda which was published on Ofwat's website on 18 May 2018;
- WB8 – Ml/d of sites made resilient to future extreme rainfall events where we have chosen not to claim a reward. This is explained in the performance commitment section below;

[4] https://www.thameswater.co.uk/-/media/Site-Content/Thames-Water/Corporate/AboutUs/Our-strategies-and-plans/our-five-year-plan/Supporting-information/Update-on-outcome-delivery-incentives-May-2018.pdf
[5] https://www.ofwat.gov.uk/publication/notice-ofwats-proposal-impose-penalty-thames-water-utilities-limited/

- SB3 – Properties protected from flooding due to rainfall (including Counters Creek project) where we explained in our commentary for table 3a that the Counters Creek specific element of this performance commitment that we agreed at PR14 is designed so that we may choose to deliver a different combination of outputs to those funded at PR14 rather than cancelling the scheme, while still protecting customers at risk of sewer flooding in the Counters Creek catchment. As we are neither cancelling the scheme nor delivering it late, it is not possible to report the performance of our current Counters Creek programme against the PR14 ODI wording. We will, therefore, be proposing to Ofwat that we amend SB3 to recognise our new approach to protecting customers in the Counters Creek catchment and that we are still delivering the right outcome for customers.

Mitigating factors

Our mitigating factors are set out in our "AMP6 Outcomes Reporting Policy – Annex 1", which is published on our company website. Mitigating factors could include weather, changes in the methods of measurement, exceptional regional or national events, and disproportional impact of single asset failure or combination of events or transferred S105a assets. We have not applied any mitigating factors to our forecast data.

2 APP5: performance commitments

Overview

We have set out below commentary on each performance commitment. We explain:

- The assumptions we have made when filling in the tables;
- The calculation steps for each financial Outcome Delivery Incentive (ODI) forecast, including those that are in the underperformance penalty or outperformance payment deadband;
- How the ODI has been calculated for each of the performance commitments with sub-measures in relation to the individual forecast sub-measure performance levels;
- Whether the amount being claimed for each ODI is the same or different from the outperformance payment / underperformance penalty determined by their reported performance;
- Where the forecast ODI value in table APP5 differs in any way from the automatic operation of the ODIs as set out in the PR14 final determination company-specific appendix;
- The reasons behind any material changes in performance;
- Whether, and how, any mitigating factors have been applied to the actual or forecast performance for each ODI and its justification for applying these. We also explain how we have interpreted any ambiguity and what assurance we obtained on the interpretation of the ambiguity;
- Where we have identified issues with past reporting of data and the impact it has had on the past reported figures. We also explain how we have adjusted our ODI claim for any issues identified with past reporting of our data;
- Where we have refined our methodology for reporting any performance commitment and the impact that this has had on its reported figures; and
- The internal and external assurance (including our Customer Challenge Group) for our ODI claim. We have provided a full and accurate summary of the results of any audits carried out, outlining any issues that have arisen and what actions we have taken to rectify them.

We also note that there have been any mitigating factors (for example, weather, third party actions or exceptional events) applied to the forecast performance.

WA1: Improve handling of written complaints by increasing 1st time resolution (Non-financial PC)

For each financial year of the AMP, we committed to resolve 95% of written complaints relating to the wholesale water business (excluding written complaints with respect to metering) at the first stage, without the need for escalation.

In 2015/16 performance was below our target at 91%. To improve this performance:

- We introduced the “One Desk” process which involved bringing people from different areas of the business together, to work in one room, where they could collectively own a job through

to resolution. Review of the improvement driven by this process indicated it did not work as well as we had hoped;

- We took our learnings from the "One Desk" process and transformed into the current "Model Office". This helps ensure all customer journeys are dealt with correctly first time through minimising inefficient process handoffs. This has also helped employees understand the impact their individual roles have on our customer service level; and
- We also conducted more telephone reviews of customer complaints and used this review to enable quicker escalation within the complaints procedure to reduce the need for customers to write again.

Changing how we work together led to improvements in years 2 and 3 of the AMP where we outperformed our commitment level. Based on trends of higher complaint volumes, at both first and second stage, principally as a result of the weather event in March 2018, performance is forecast to dip marginally in 2018/19 and recover in 2019/20.

WA2: Number of written complaints per 10,000 connected properties (Non-financial PC)

We committed to minimise the number of written complaints per 10,000 connected properties. Despite delivering our commitment in 2015/16 and 2016/17 performance declined year on year and this trend continued in 2017/18. For 2017/18 we did not meet the commitment driven predominantly by higher complaint volumes on Outside Stop Valve and Customer Side Leakage customer journeys.

In order to address this trend, we have:

- Undertaken a restructure of our wholesale water network organisation which is placing greater emphasis on regional accountability and central governance and excellence. This is being supported by our transformation programme which is introducing proactive customer journey management to enhance overall certainty of delivery;
- Implementation of the "Model Office" with initiatives to improve how and when we keep customers informed of job progress; and
- We are reviewing the Customer Side Leakage customer journey with the aim to improve customer service in 2018/19.

Our forecast for 2018/19 reflects the high volumes of complaints received this year as a result of the extreme weather event in March 2018. However, through the effective implementation of the above mitigating measures, we are forecasting to improve our performance in 2019/20.

WA3: Customer satisfaction surveys (internal CSAT monitor) (Non-financial PC)

We committed to delivering high level customer satisfaction, measured through scores for customer contacts relating to the wholesale water operational activity, using our internal customer satisfaction monitor (CSAT).

In order to strengthen performance following a decline in 2017/18, we have undertaken the following actions in addition to the mitigating measures (noted above in WA1 and WA2):

- "Model Office" in place with greater focus on customer resolution and the adoption of a clearly defined set of business rules which allow us to prioritise our repairs works consistently and effectively;
- Event management has been steadily improving, with strong emphasis on reaching out to priority customers; and
- We will continue to drive improvements in the External Leak/Flood journey, which had the biggest impact on our customer performance.

Through the effective implementation and continuous monitoring of the above mitigating measures, we are forecasting to maintain stable performance through 2018/19 and 2019/20.

WA4: Reduced water consumption from issuing water efficiency devices to customers (Penalty only ODI)

This measure has an end of AMP target. The unit for this measure is cumulative so the 2018/19 and 2019/20 forecasts are reported as a cumulative value from the beginning of the AMP. This is consistent with our reporting for 2017/18. In previous years we have reported this measure as 'not available' (N/A) and remarked on our progress to date in the commentary.

Table 5 - WA4: Reduced water consumption from issuing water efficiency devices to customers

Forecast year	2018/19	2019/20
Performance commitment level	End of AMP target	15.45 Ml/d
Forecast performance level	28.32 Ml/d (8.1 Ml/d in year)	35.02 Ml/d (6.7 Ml/d in year)
Performance commitment level met	N/A	Yes
Underperformance penalty deadband	N/A	15.45 Ml/d
Underperformance penalty rate	N/A	£0.885m per Ml/d
Underperformance payment	N/A	= 15.45 Ml/d (deadband) – 15.45 Ml/d (forecast performance) = 0 (within deadband) * £0.885m = £0m

The forecast performance numbers for 2018/19 and 2019/20 are derived from averages of performance in 2016/17 and 2017/18 (CPL: 99.94% in both 2016/17 and 2017/18; using the water savings calculation methodology which applies Ofwat's "assumed savings" methodology from 2011) adjusted for the current anticipated reduced level of meter installations including our Progressive (Compulsory) Metering Programme and increases in other projects to mitigate this reduction.

As stated in our methodology, before the end of the AMP, we are intending to move from the 'assumed savings' methodology to an actual measured savings value assigned to each water efficiency activity.

Our Water Efficiency initiatives are working to deliver the savings required to achieve the committed performance level using actual measured savings, whilst still reporting 'assumed savings' values up to the end of AMP6. During years 4 and 5, we will seek to improve the accuracy of the measured savings values. We will also be proposing alterations to the performance commitment with the intention of including water savings delivered on non-household sites which will further increase the

forecast for 2019/20. We will consult our Customer Challenge Group on the proposed changes prior to making any changes to the measure.

WA5: Provide a free repair service for customers with a customer side leak outside of the property (Non-financial PC)

We are forecasting to achieve our target level of performance for this commitment, consistent with our delivery plans for achieving an end of AMP leakage target of 606 Ml/d. This leakage target is supported by an increase in the number of repairs being made to customer side leaks

WB3: Compliance with drinking water quality standards – Ofwat/DWI KPI (Penalty only ODI)

Table 4 – WB3: Compliance with drinking water quality standards

Forecast year	2018/19	2019/20
Performance commitment level	100%	100%
Forecast performance level	99.96%	99.96%
Performance commitment level met	No	No
Underperformance penalty deadband	99.95%	99.95%
Underperformance penalty rate	£3.915m per percentage point compliance	£3.915m per percentage point compliance
Underperformance penalty	= 99.95% (deadband) – 99.96% (forecast performance) = 0 (within deadband) * £3.915m = £0m	= 99.95% (deadband) – 99.96% (forecast performance) = 0 (within deadband) * £3.915m = £0m

The forecasts for 2018/19 and 2019/20 are in line with historic performance. Since the change in lead standard we have consistently achieved 99.96%, which was above the committed performance levels in 2015/16 and 2016/17. Whilst we always strive to improve this measure is extremely sensitive to individual sample exceedances, many of which are due to the condition of customer plumbing e.g. lead or nickel.

WB4/WB1.4: Properties experiencing chronic low pressure (DG2) (Non-Financial PC)

The forecasts for 2018/19 and 2019/20 are in line with historic trends, with the exception of 2017/18 which is considered an outlier. The exceptional increase in 2017/18 is due to the large number of properties that were added to the register during the freeze/thaw event in February and March of 2018. Specifically, the methodology for calculating the number of properties to be included in this measure did not allow sufficient time to validate the removal of 200 properties by year end.

WB5: Average hours lost supply per property served, due to interruptions >4 hours (Penalty and reward ODI)

Table 6 – WB5: Average hours lost supply per property served, due to interruptions >4 hours

Forecast year	2018/19	2019/20
Performance commitment level	0.13	0.13
Forecast performance level	0.13	0.13
Performance commitment level met	Yes	Yes

Forecast year	2018/19	2019/20
Outperformance payment deadband	n/a	n/a
Outperformance payment incentive rate	£3.125m per 0.01 hours per property served	£3.125m per 0.01 hours per property served
Outperformance payment	= 0 * £3.125m = £0m	= 0 * £3.125m = £0m
Underperformance penalty deadband	n/a	n/a
Underperformance penalty rate	£5.335m per 0.01 hours per property served	£5.335m per 0.01 hours per property served
Underperformance penalty	= 0 * £5.335m = £0m	= 0 * £5.335m = £0m

For years 1 and 2 of the AMP we earned a small reward and in year 3 a penalty which was impacted by the freeze/thaw event in February and March. We have forecast target levels for 2018/19 and 2019/20 to be in line with our commitment.

WB6: Security of Supply Index - Ofwat KPI (Penalty only ODI)

Table 7 – WB6: Security of Supply Index

Forecast year	2018/19	2019/20
Performance commitment level	100	100
Forecast performance level	100	100
Performance commitment level met	Yes	Yes
Underperformance penalty deadband	n/a	n/a
Underperformance penalty rate	£2.265m per index point	£2.265m per index point
Underperformance penalty	0 * £2.265m = £0m	0 * £2.265m = £0m

The forecast SoSI position of 100 across all of our water resource zones for 2018/19 and 2019/20 is challenging and achievable. The key to achieving this measure is dependent on a number of activities. This includes our commitment to delivering our ongoing leakage recovery plan, which has a forecast of 672 Ml/d for 2018/19 (a P80 plan). This performance measure is also dependent on a programme of work to manage outages of our treatment facilities, together with increased non-household water efficiency activity and water transfers. All of these activities are in progress.

WB7/SB6: Compliance with SEMD advice notes (with or without derogation) (Penalty only ODI)

Table 8a – WB7: Compliance with SEMD advice notes (with or without derogation)

Forecast year	2018/19	2019/20
Performance commitment level	Not applicable, end of AMP target	100%
Forecast performance level	36%	100%
Performance commitment level met	Not applicable, end of AMP target	Yes
Underperformance penalty deadband	Not applicable, end of AMP target	n/a

Forecast year	2018/19	2019/20
Underperformance penalty collar	Not applicable, end of AMP target	0%
Underperformance penalty incentive rate	Not applicable, end of AMP target	40.94% of annualised costs saved through scope reduction
Underperformance penalty	Not applicable, end of AMP target	£0.0000m

Table 5b – SB6: Compliance with SEMD advice notes (with or without derogation)

Forecast year	2018/19	2019/20
Performance commitment level	Not applicable, end of AMP	100%
Forecast performance level	44%	100%
Performance commitment level met	Not applicable, end of AMP	Yes
Underperformance penalty deadband	Not applicable, end of AMP	Not applicable
Underperformance penalty collar	Not applicable, end of AMP target	0%
Underperformance penalty incentive rate	Not applicable, end of AMP target	40.94% of annualised costs saved through scope reduction
Underperformance penalty	Not applicable, end of AMP target	£0.0000m

These are five-year measures to comply with 100% of advice notes by the end of the AMP. In previous years we have reported our in-year performance as "not available", as there is no specific 'in year' target. The performance commitment response document that we submitted at PR14 states that *"The business plan is clear that in most cases the PR14 submission is based on estimated scopes of work which create an available budget. Having secured the budget on the principles of design/activity the funds are allocated on a risk basis to deliver as many sites/activities as possible for that budget. In many solutions there is no commitment for a specific number of sites to be 'completed' but for an acceptable reduction in, or identification of, risk to be achieved. Defra consider the funds awarded to be ring fenced for SEMD related activities"*.

To provide greater openness and transparency on our performance, this year we have provided an in-year figure in accordance with reporting guidance. This has been calculated as the cumulative number of sites delivered since the beginning of the AMP divided by the total number of sites in the programme. The result is a somewhat conservative figure, as it does not take account of additional scope delivered on these sites.

Our expectation is that we will use the full £124m allowance to deliver additional scope on fewer sites over this AMP. We intend to review our programme with Defra to confirm that this approach meets Defra's requirements (which we believe it does). On this basis, therefore, we forecast an ODI penalty of zero.

WB8: Ml/d of sites made resilient to future extreme rainfall events (Penalty and reward ODI)

Table 9 – WB8: Ml/d of sites made resilient to future extreme rainfall events

Forecast year	2018/19	2019/20
Performance commitment level	Not applicable, end of AMP	1,015

Forecast year	2018/19	2019/20
	target	
Forecast performance level	772	1,016
Performance commitment level met	Not applicable, end of AMP target	Yes
Outperformance payment deadband	Not applicable, end of AMP target	Not applicable
Outperformance payment cap	Not applicable, end of AMP target	1,218
Outperformance payment incentive rate	Not applicable, end of AMP target	£0.005m/Ml/d cumulative
Outperformance payment	Not applicable, end of AMP target	£0.000m
Underperformance penalty deadband	Not applicable, end of AMP	Not applicable
Underperformance penalty collar	Not applicable, end of AMP target	812
Underperformance penalty incentive rate	Not applicable, end of AMP target	£0.005m/Ml/d cumulative
Underperformance penalty	Not applicable, end of AMP target	£0.000m

The unit for this measure is cumulative so we are now reporting on a cumulative basis from the beginning of the AMP for the current and forecast year values for 2017/18, 2018/19 and 2019/20. All work is now in the delivery phase and the forecasts for 2018/19 and 2019/20 are in line with the delivery programme. Our current expectation is that we will outperform the target as a result of 0.39 Ml/d at Raynes Park which was listed as 0 Ml/d in the appendix T0024 - WNI Flood Resilience Investment Area Document when we submitted the PR14 business plan.

We do not consider it appropriate to claim a reward for the increase in Ml/d, particularly when the equivalent measure for waste does not have a reward as part of the measure. We have therefore left the reward in Year 5 as blank.

Our 2016/17 performance was reported on an in year basis (zero); this would have been four on a cumulative basis as this is what was delivered in 2015/16.

WC1: Greenhouse gas emissions from water operations (Non-Financial PC)

The greenhouse gas forecasts for 2018/19 and 2019/20 are calculated from an annual model which takes into account historic performance, current and future electricity consumption. Forecasts are aligned with the Year 4 budget and we are on track to meet the performance commitment for 2018/19 and 2019/20.

On 18 May 2018 Ofwat published the actual UK emission factors, confirmed annually by Defra. Future performance commitment levels will be updated each year to account for changes to Defra's grid electricity emissions factors. No other changes will be made.

WC2: Leakage (Penalty and reward ODI)

Table 10 – WC2: Leakage

Forecast year	2018/19	2019/20
Performance commitment level	612	606
Forecast performance level	672*	606
Performance commitment level met	No	Yes
Outperformance payment deadband	600	594
Outperformance payment incentive rate	£0.270m per Ml/d	£0.270m per Ml/d
Outperformance payment	= 0 * £0.270m = £0m	= 0 * £0.270m = £0m
Underperformance penalty deadband	n/a	n/a
Underperformance penalty rate	£0.450m per Ml/d	£0.450m per Ml/d
Underperformance penalty	= 612 (target) – 672 (penalty collar removed) = -60 * £0.450m = £27m	= 0 * £0.450m = £0m

* Note: this is a P80 plan

Our forecasts are in line with those submitted to Ofwat in May 2018. We have removed the penalty collar for the 2018/19 and 2019/20. The impact of the adverse weather in quarter 4 of 2017/18 and current dry weather that we are experiencing (and the associated increase in demand which increased water pressures with a knock on impact on leakage) has placed additional pressure on the plan. We are now reviewing our plan to understand the steps required to bring us back on target.

WC3: Abstraction Incentive Mechanism (AIM) (Non-Financial PC)

The forecasts for 2018/19 and 2019/20 are simply set to zero Ml volume, as based on our historical reporting we expect to achieve or exceed the target. It is difficult to predict a more accurate number than this as it is dependent on low river flows and therefore weather. Negative (or below zero) AIM scores in any reporting year signify improved performance as average abstraction is less than the baseline. Positive (or above zero) AIM score shows a performance which is not as good as the agreed baseline average daily abstractions, calculated in line with the Ofwat guidance.

WC4/SC6: We will educate our existing and future customers (Non-Financial PC)

The forecasts for 2018/19 and 2019/20 are in line with historic performance over the last two years and the assumption is that we will continue to perform at this improved level rather than our original performance commitment targets.

WC5: Deliver 100% of agreed measures to meet new environmental regulations (Penalty only ODI)

This is a five-year measure with a 100% target at the end of the AMP. As in previous years we have reported the in-year actuals and forecasts as “not available” as the performance commitment was not designed to be reported mid-AMP. Calculating the number of sites delivered to date as a percentage is not meaningful when deliverables are of different sizes and complexities and the delivery profile is not evenly phased.

Table 11 – WC5: Deliver 100% of agreed measures to meet new environmental regulations

Forecast year	2018/19	2019/20
Performance commitment level	Not applicable, end of AMP target	100%
Forecast performance level	Not available	100%
Performance commitment level met	Not applicable, end of AMP target	Yes
Underperformance penalty deadband	Not applicable, end of AMP target	Not applicable
Underperformance penalty collar	Not applicable, end of AMP target	0%
Underperformance penalty incentive rate	Not applicable, end of AMP target	40.94% of 2015-20 costs reduced through scope reductions
Underperformance payment	Not applicable, end of AMP target	£0.0000m

Our forecasts are based on our delivery programme forecasts, which is on track to delivery by the end of the AMP. Some schemes have been deferred with the agreement of the Environment Agency and form part of the schemes to be completed by 2019/20.

WD1: Energy imported less energy exported (Non-Financial PC)

The production of the energy forecast is in line with the volume forecast used for business planning and feeds in the energy risk committee financial models of energy costs for the AMP. The volume model includes the Operational base, an allowance for the impact of production volumes and agreed change programmes. Forecasts are aligned with the current budget. We forecast to hit the 2019/20 performance commitment target of 476GWh by the end of the AMP. In order to achieve this recovery, we must prioritise the following during the remainder of the AMP:

- Reducing water (and energy) demand;
- Producing water at more energy efficient sources; and
- Investing in more energy efficient pumping.

SA1: Improve handling of written complaints by increasing first time resolution (Non-financial PC)

For each financial year of the AMP, we committed to resolve 95% of written complaints relating to the wholesale wastewater business at the first stage, without the need for escalation.

Year on year improvements have been experienced since 2015/16, though not enough to deliver our performance commitment level. In 2017/18, the second and third quarters saw slightly higher numbers of complaints as a result of increased external flooding cases and dissatisfaction with responses from customer relations. However, in the last quarter of 2017/18, we have been meeting our targeted levels.

We are forecasting to maintain our performance through 2018/19 at the current level and improve on this in 2019/20.

SA2: Number of written complaints per 10,000 connected properties (Non-financial PC)

We committed to minimise the number of written complaints per 10,000 connected properties. We have consistently delivered the performance commitment in the last three years and are forecasting to deliver our commitment in the remaining two years of the AMP.

SA3: Customer satisfaction surveys (internal CSAT monitor) (Non-financial PC)

We committed to delivering high level customer satisfaction, measured through scores for customer contacts relating to the wholesale wastewater operational activity, using our internal CSAT monitor. Our performance has been marginally below the targeted levels in the last three years. In order to improve performance, we have undertaken the following activities during the AMP:

- In May 2016 we opened a customer solution centre in partnership with our waste network contractor, bringing customer service agents and field operations specialists into a 'one stop shop' centre to improve the resolution of complaints. This is a new way of working that includes an upfront assessment of the issue, then liaising with all involved to ensure the right team and equipment are on site quickly to resolve the issue.
- We have invested in training our teams and are trialing the way we work in specific regions ensuring better customer communication and driving down repeat contacts overall.

Through the effective implementation and continuous monitoring of the above mitigating measures, we are forecasting to improve on our current level of performance throughout 2018/19 and 2019/20.

SB3 – Properties protected from flooding due to rainfall (including Counters Creek project)

As we are delivering an alternative approach will provide at risk properties with greater localised protection, sooner and for a lower cost than could be delivered by a strategic sewer as opposed to cancelling our flood alleviation work in the Counters Creek area, there should be no ODI penalty. We do recognise, however, that as a result of our alternative solution we will save a considerable amount of money £124.1m. Half of this underspend will be automatically returned to customers at the end of this AMP through the totex sharing mechanism and assuming we will be able to agree with Ofwat that no ODI penalty applies, we propose to return the remainder of the underspend to customers at the end of this AMP. We think this is the right thing to do, as our change in approach is due to better information about flooding in the Counters Creek catchment. We will suggest a mechanism for implementing this solution in our ODI amendment proposal to Ofwat, which we will submit later this year. The forecast underspend is based on the amount we have spent since 2015 and our project forecasts for 2018/19 and 2019/20, compared to the final determination baseline for Counters Creek.

Table 12 – SB3: Properties protected from flooding due to rainfall

Forecast year	2018/19	2019/20
Performance commitment level	Not applicable, end of AMP	2,127
Forecast performance level	Not applicable, end of AMP	969
Performance commitment level met	Not applicable, end of AMP	See above
Underperformance penalty collar	Not applicable, end of AMP	1,459
Underperformance penalty rate/over performance incentive rate	Not applicable, end of AMP target	Determined by reference to actual costs and benefits matrix
Underperformance payment	Not applicable, end of AMP target	See above

In tables 3A and APP5 we have reported the number of property equivalents delivered (actual and forecast) for each year. The cumulative number for each year of AMP6 is set out in Table 13 below.

Table 13 – cumulative property equivalents for AMP6

	2015/16	2016/17	2017/18	2018/19	2019/20
Property equivalents	379	439	479	647	969

The £124.1m reflects the difference (in 2012/13 prices) between the final determination baseline cost for the Counters Creek project (£227.2m) and our latest forecast (£103.2m).

SB4: Number of internal flooding incidents, excluding those due to overloaded sewers (SFOC) (Penalty and reward ODI)

Table 14 – SB4: Number of internal flooding incidents, excluding those due to overloaded sewers

Forecast year	2018/19	2019/20
Performance commitment level	1,085	1,085
Forecast performance level	1,040	1,040
Performance commitment level met	Yes	Yes
Outperformance payment deadband	1,085	1,085
Outperformance payment incentive rate	£0.055m per sewer flooding other cause incident	£0.055m per sewer flooding other cause incident
Underperformance penalty deadband	1,085	1,085
Underperformance penalty incentive rate	£0.090m per sewer flooding other cause incident	£0.090m per sewer flooding other cause incident
Outperformance payment	= 1,085 (deadband) – 1,040 (forecast performance) = 45 * 0.055 = £2.475m	= 1,085 (deadband) – 1,040 (forecast performance) = 45 * 0.055 = £2.475m

Our projected forecasts are 1,040 for both 2018/19 and 2019/20. The forecasts for AMP6 are in line with the AMP7 start performance level for sewer flooding other cause incidents (SFOCs) (1,040) and in line with the agreed budget for AMP6. Although the measure is sensitive to weather conditions the assumption has been made that this level of performance is achievable with blockage prevention measures including additional sewer cleansing and continued customer education to raise awareness of the impact of sewer abuse. In addition our recently expanded network protection team will continue to deliver new interventions targeting food establishments in high risk areas to reduce the influence of sewer abuse on our network performance.

The forecast amount to be claimed for this ODI is equal to the outperformance payments calculated in the table above. No mitigating factors have been applied to our performance levels.

In 2015/16 we identified an issue with the completeness of our SFOC reporting. The issue was raised with Ofwat at the time and subsequently we undertook an investigation into the end to end data capture process for this measure. As a result we re-stated our numbers for AMP5 and took measures to ensure that our 2015/16 submitted numbers were complete and accurate. No targets for AMP6 were re-stated as part of this process.

The end to end process review identified some grey areas in our approach to classifying a flood. We changed our policy in Year 1 of AMP6 to address these, add clarity and make our reporting process

more consistent and robust. Our review aims were to ensure that the AMP6 policy was logical; best served our customers and was consistent with industry practice. Water UK Benchmarking studies were used to align our approach with the upper quartile water companies (the basis on which AMP6 targets were set). Our approach to reporting this measure has therefore been brought in line with how the targets for this measure were set. We have applied this approach consistently throughout the AMP and significant process and data quality controls have been implemented to validate that data has been correctly captured for all reported internal flooding.

SB5: Contributing area disconnected from combined sewers by retrofitting sustainable drainage (Penalty and reward ODI)

Table 15 – SB5: Contributing area disconnected from combined sewers by retrofitting sustainable drainage

Forecast year	2018/19	2019/20
Performance commitment level	Not applicable, end of AMP target	20 hectares
Forecast performance level	15 hectares	20 hectares
Performance commitment level met	Not applicable, end of AMP target	Yes
Penalty collar	Not applicable, end of AMP target	10 hectares
Reward cap	Not applicable, end of AMP target	50 hectares
Outperformance payment incentive rate	Not applicable, end of AMP target	£0.475 per hectare (cumulative)
Underperformance penalty rate	Not applicable, end of AMP target	£0.515 per hectare (cumulative)
Outperformance payment/ underperformance penalty	Not applicable, end of AMP target	= 20 (PCL) - 20 (forecast performance) = 0

The measure is hectares cumulative therefore the forecasts for 2018/19 and 2019/20 are cumulative since the beginning of the AMP. Our forecasts are in line with our delivery plans. We have high confidence in the delivery of 19 hectares of the 20 hectares target by the end of Year 5. We are continuing our active engagement with stakeholders and we are confident that there is the potential in both our current and any future opportunities to deliver the remaining 1 hectare. We will provide an update to the status of this element in Year 4.

SB7: Population equivalent of sites made resilient to future extreme rainfall events (Penalty only ODI)

Table 16 – SB7: Population equivalent of sites made resilient to future extreme rainfall events

Forecast year	2018/19	2019/20
Performance commitment level	Not applicable, end of AMP target	1,700,000
Forecast performance level	815,170	1,938,100
Performance commitment level met	Not applicable, end of AMP target	Yes
Underperformance penalty deadband	Not applicable, end of AMP target	Not applicable

Forecast year	2018/19	2019/20
Underperformance penalty collar	Not applicable, end of AMP target	1,360,000
Underperformance penalty incentive rate	Not applicable, end of AMP target	0.72 £/PE cumulative
Underperformance penalty	Not applicable, end of AMP target	£0.0000m

This is a five-year, cumulative performance measure.

Our forecasts for 2018/19 and 2019/20 are in line with our current delivery plans which are to deliver the same sites and scope as included within the final determination. This translates into a population equivalent which is higher than that which was included in the final determination due to the level of growth in the catchment (i.e. forecast higher than target due to growth). If we translate this back into the same population base as the final determination this would equate to a forecast of 734,631 in 2018/19 and 1,700,000 (rounded) in 2019/20. This performance commitment does not have a reward.

SB8: Lee Tunnel including Shaft G (Penalty only ODI)

Table 17 – SB8: Lee Tunnel including Shaft G

Forecast year	2018/19	2019/20
Performance commitment level	None	None
Forecast performance level	n/a	n/a
Performance commitment level met	Scheme delivered in 2015/16	Scheme delivered in 2015/16
Underperformance penalty	£0.0000m	£0.0000m

The performance commitment was delivered in 2015/16 so there are no forecasts for 2018/19 and 2019/20 and no underperformance penalty applies.

SB9: Deephams Wastewater Treatment Works (Penalty only ODI)

Table 18 – SB9: Deephams Wastewater Treatment Works

Forecast year	2018/19	2019/20
Performance commitment level	None	None
Forecast performance level	n/a	n/a
Performance commitment level met	Scheme delivered in 2016/17	Scheme delivered in 2016/17
Underperformance penalty	£0.0000m	£0.0000m

The performance commitment was delivered in 2016/17 so there are no forecasts for 2018/19 and 2019/20 and no underperformance payment applies.

SC1: Greenhouse gas emissions from wastewater operations (Non-Financial PC)

The greenhouse gas forecasts for 2018/19 and 2019/20 are calculated from an annual model which takes into account historic performance, current and future electricity consumption. Forecasts are aligned with the Year 4 budget and we are on track to meet our performance commitment for 2018/19 and 2019/20.

On 18 May 2018 Ofwat published corrigenda confirming that, for this and WC1, the committed performance levels are linked to actual UK emission factors, confirmed annually by Defra. Future performance commitment levels will be updated each year to account for changes to Defra's grid electricity emissions factors. No other changes will be made.

SC2: Total category 1-3 pollution incidents from sewage related premises (Penalty and reward ODI)

Table 19 – SC2: Total category 1-3 pollution incidents from sewage related premises

Forecast year	2018/19	2019/20
Performance commitment level	340	340
Forecast performance level	292	292
Performance commitment level met	Yes	Yes
Forecast any category 1 or 2 incidents (negates any reward if "yes")	Yes	Yes
Outperformance payment deadband	263	263
Outperformance payment cap	229	229
Outperformance payment incentive rate	£0.130m per pollution incident	£0.130m per pollution incident
Outperformance payment	No reward due to being in reward deadband and forecast of category 1 or 2 pollution incident occurring	No reward due to being in reward deadband and forecast of category 1 or 2 pollution incident occurring
Underperformance penalty deadband	400	400
Underperformance penalty collar	465	465
Penalty rate	£0.130m per pollution incident	£0.130m per pollution incident
Underperformance penalty	£0.000	£0.000

The forecasts for 2018/19 and 2019/20 are based on our actual performance in AMP6 up to 2017/18. They are stretching as they aim to deliver a performance that will support our AMP7 position which also includes polluted surface water outfalls.

SC3: Sewage treatment works discharge compliance (Penalty only ODI)

Table 20 – SC3: Sewage treatment works discharge compliance

Forecast year	2018/19	2019/20
Performance commitment level	100%	100%
Forecast performance level	98.58%	99.16%
Performance commitment level met	No	No
Underperformance penalty deadband	98.88%	98.88%
Penalty rate	£3.845m/pp. compliance/year	£3.845m/pp. compliance/year
Underperformance penalty	= 98.88% (deadband) – 98.58% (forecast performance) = 0.3% * £3.845m = £1.1535m	£0.000m

Since the publication of our Annual Performance Report we have had additional information come to light in relation to a fourth discharge compliance incident we were investigating. The result of our

review has pushed us into penalty territory for the calendar year 2018/19. Taking account of this fourth failure, our performance is slightly less favourable than our current AMP6 average performance level. This has led to an increase in our forecast for the remainder of the year to include five failing works. Our root cause analysis and compliance action plans have allowed us to reduce our forecast of five for 2018/19 to three failures in 2019/20.

Our root cause analysis of the final effluent failures has shown that the non-compliant samples were caused by one of the two themes identified below:

1. A lack of effective communication between our operational teams and our civil contractors during major site upgrade works at Deephams STW and Cholsey STW resulted in poor responses to operational issues. Accountability for dealing with process issues occurring in operational areas under the control of contractors was not clearly defined. This led to confusion and delayed responses which resulted in brief discharges of non-compliant effluent that coincided with regulatory sample collection. To address this and prevent a recurrence, communications in respect of future Capital Delivery projects will be managed by an Operations Liaison Engineer and, where appropriate, additional operators will support the process for the duration of the project to minimize the risk of any environmental impact
2. Final effluent failures at Chertsey STW and Wolverton Townsend STW were directly attributable to operational errors. Approved procedures for undertaking operational activities which increased the risk of non-compliant effluent discharges were not closely followed and appropriate mitigation was not put in place. This resulted in discharges of non-compliant effluent that coincided with regulatory sample collection. To address this and prevent recurrence, our operational teams will be re-briefed on the importance of ensuring that any activity which increases the risk of non-compliant effluent discharge is carried out in accordance with established procedures and that effective mitigation is put in place for the duration of the activity.

The points raised above will be shared with all of our operational colleagues so that we can collectively improve the way that we operate our sites and avoid future failures.

SC4: Water bodies improved or protected from deterioration as a result of Thames Water's activities (Non-Financial PC)

The forecasts for 2018/19 and 2019/20 are in line with current delivery plans. Excellent progress has and continues to be made on our pioneering catchment management trial to control phosphorus in all thirteen waterbodies featured in our Evenlode catchment project. However, we now believe our aspiration to evidence the resulting river phosphorus concentration change across all the water bodies is unlikely to be achieved before the end of the AMP6 period. Since commencing this project, evidence has emerged from the Defra Demonstration Test Catchments programme that within the first five years of catchment management, changes in pollutant concentrations are only likely to be detectable at the field, or small sub-catchment scale. The large background of variability of phosphorus concentrations and loads, both within and between years, is a significant factor that hinders clear demonstration of improvements arising from interventions.

Our revised forecast is that we anticipate we will be able to demonstrate the change in the three pilot waterbodies where we commenced this trial and have set up a detailed monitoring system. Despite having a highly successful engagement process well underway in the remaining 10 water bodies, it is unlikely that there is sufficient time remaining in AMP6 for the system to respond, in terms of

demonstrable change in water quality, to the catchment management interventions which will be underway.

This change in forecast does not represent the technical success of the project and it should not be inferred that catchment management of phosphorus is not a viable option. Rather it reflects an ambitious target set for an experimental project. Using alternative measures of success now commonly used in the early stages of a catchment management trial (the first five years) we can clearly demonstrate excellent progress. Examples include farms covering over 70% of the pilot catchment area comprehensively engaging in the trial, and 80% of those farms implementing measures through our catchment fund.

We are proposing to continue this trial into AMP7 as part of our PR19 business plan to ensure that the benefits from this approach are not undervalued and to understand the length of time it takes for the full benefit to be realised.

SC5: Satisfactory sludge disposal compliance (Non-Financial PC)

The forecasts for 2018/19 and 2019/20 are in line with historic performance.

SC7: Modelled reduction in properties affected by odour (Penalty and reward ODI)

Table 21 – SC7: Modelled reduction in properties affected by odour

Forecast year	2018/19	2019/20
Performance commitment level	6593 properties	6593 properties
Forecast performance level	6822 properties	6822 properties
Performance commitment level met	Yes	Yes
Outperformance payment deadband	n/a	n/a
Outperformance payment incentive rate	£220 /modelled reduction in properties/year	£220 /modelled reduction in properties/year
Outperformance payment	6593 (CPL) - 6822 (forecast performance) = 229) = 229 * £220 = £0.0504m	6593 (CPL) - 6822 (forecast performance) = 229) = 229 * £220 = £0.0504m
Underperformance penalty deadband	n/a	n/a
Underperformance penalty collar	£3m over the AMP	£3m over the AMP
Underperformance penalty rate	£270 /modelled reduction in properties/year	£270 /modelled reduction in properties/year
Underperformance penalty	£0.0000m	£0.0000m

The unit for this performance commitment is cumulative reduction in properties affected by odour. The performance level forecasts 2018/19 and 2019/20 are cumulative from the beginning of the AMP and the ODI forecasts relate to in year ODI. Our forecasts are based on our delivery plans which are on track to outperform the target. In 2018/19 we are forecasting to deliver modelled odour reduction at the following sites to deliver a total of 4842 properties:

- Deephams 3850 properties;
- Bicester 717 properties; and
- Beddington 275 properties.

We are assessing customer complaints to ensure we are selecting the right site investment and by adhering to odour management plans and best practice.

SC8: Deliver 100% of agreed measures to meet new environmental regulations (Penalty only ODI)

Table 22 – SC8: Deliver 100% of agreed measures to meet new environmental regulations

Forecast year	2018/19	2019/20
Performance commitment level	Not applicable, end of AMP target	100%
Forecast performance level	Not available	100%
Performance commitment level met	Not applicable, end of AMP target	Yes
Underperformance penalty deadband	Not applicable, end of AMP target	Not applicable
Underperformance penalty collar	Not applicable, end of AMP target	Do not deliver NEP5
Underperformance penalty incentive rate	Not applicable, end of AMP target	40.4% of cost saved through scope reduction
Underperformance penalty	Not applicable, end of AMP target	£0.0000m

This is a five-year measure with a 100% target at the end of the AMP. As in previous years we have reported the in-year actuals and forecasts “not available” as the performance commitment was never designed to be reported mid-AMP. Calculating the number of sites delivered to date as a percentage is meaningless when deliverables are of different sizes and complexities and the delivery profile is not straight lined.

Our forecasts are based on our delivery programme forecasts, which is on track to delivery by the end of the AMP. Some schemes have been deferred with the agreement of the Environment Agency and form part of the schemes to be completed by 2019/20. These are recorded in the Environment Agency’s NEP tracker.

SC9: Reduce the amount of phosphorus entering rivers to help improve aquatic plant and wildlife (Penalty and reward ODI)

Table 23 – SC9: Reduce the amount of phosphorus entering rivers to help improve aquatic plant and wildlife

Forecast year	2018/19	2019/20
Performance commitment level	Not applicable, end of AMP target	59.3kg/day
Forecast performance level	Not available	59.3kg/day
Performance commitment level met	Not applicable, end of AMP target	Yes
Underperformance penalty deadband	Not applicable, end of AMP target	Not applicable
Underperformance penalty collar	Not applicable, end of AMP target	0
Outperformance payment cap	Not applicable, end of AMP target	199

Forecast year	2018/19	2019/20
Underperformance or outperformance payment incentive rate	Not applicable, end of AMP target	Determined by reference to actual costs and benefits on completion of the price control period as the penalty rate will be a function of our actual performance against the restated performance commitment reflecting the costs and benefits foregone of any units (kg/d) not delivered.
Underperformance penalty	Not applicable, end of AMP target	£0.0000m

The forecasts for 2018/19 and 2019/20 are in line with current delivery plans which are on track for full delivery by end of the AMP.

During the 2016/17 financial year we restated the committed performance level in line with the expectations of the final NEP5 as confirmed by the Environment Agency; reward caps and penalty collars remain unchanged.

The annual benefits delivered have been determined by the same method for calculating the benefits of the 2015-20 programme. The final NEP5 programme of phosphorus removal from rivers equates to 59.3kg/day by March 2020. This revised target delivers £2.062m annualised benefit for £31.591m totex (annualised cost of £1.105m) by the end of AMP6. To return the company share of totex saved through this scope reduction back to customers, a downward RCV adjustment of £7.269m will need to be made at PR19 (all amounts in 2012/13 prices). This will be on top of any reward or penalty for actual performance under this performance commitment.

We have reported on the basis of the corrigenda published on the Ofwat website on 18 May 2018.

SD1: Energy imported less energy exported (Non-Financial PC)

We are not forecasting to deliver our committed performance levels for 2018/19 and 2019/20. At the time we set our performance commitment we set a challenging baseline which we have not been able to meet. This optimistic baseline combined with our failure to eliminate energy inefficiencies at the rate we had aspired to, has slowed out progress in this area.

To achieve our current forecast, which is above the committed performance level, the main focus of our efforts for the remainder of AMP6 will be:

- The ongoing delivery of energy efficiencies where they are economic, and where they support our process compliance or resilience;
- The continued targeting of opportunities to eliminate wasted energy (energy consumption exceeding plant design);
- Delivering the Beckton to Abbey Mills renewable electricity direct supply to reduce grid import;
- Complete CHP replacement at Maple Lodge;
- Switching off Crossness incinerator and expanding THP;

- Realise full benefits of Basingstoke and Riverside THPs; and
- Aeration Blower Replacement.

T1A: Successful procurement of the Infrastructure Provider (IP) (Non-Financial PC)

The performance commitment was delivered in 2015/16 so there are no forecasts for 2018/19 and 2019/20.

T1B: Thames Water will fulfil its land related commitments in line with the TTT programme requirements (Non-Financial PC)

Our obligation is to fulfil Tideway access needs therefore targets are dynamic and linked to their current programme. The forecasts for 2018/19 and 2019/20 are in line with the latest delivery programme and we are forecasting to meet this performance commitment.

T1C: Completion of category 2 and 3 construction works and timely availability of sites to the IP (Penalty only ODI)

Table 24 – T1C: Completion of category 2 and 3 construction works and timely availability of sites to the IP

Forecast year	2018/19	2019/20
Performance commitment level	21	23
Forecast performance level	21	23
Performance commitment level met	Yes	Yes
Underperformance penalty deadband	21	23
Underperformance penalty incentive rate	£3.4 million per site, a year	£3.4 million per site, a year
Underperformance penalty	= 21 (deadband) - 21 (forecast performance) = 0 * £3.4m = £0m	= 23 (deadband) - 23 (forecast performance) = 0 * £3.4m = £0m

The forecasts for 2018/19 and 2019/20 are in line with the latest delivery plans. We are now reporting in accordance with the corrigenda published on the Ofwat website on 2 June 2017.

T2: Thames Water will engage effectively with the IP, and other stakeholders, both in terms of integration and assurance (Non-Financial PC)

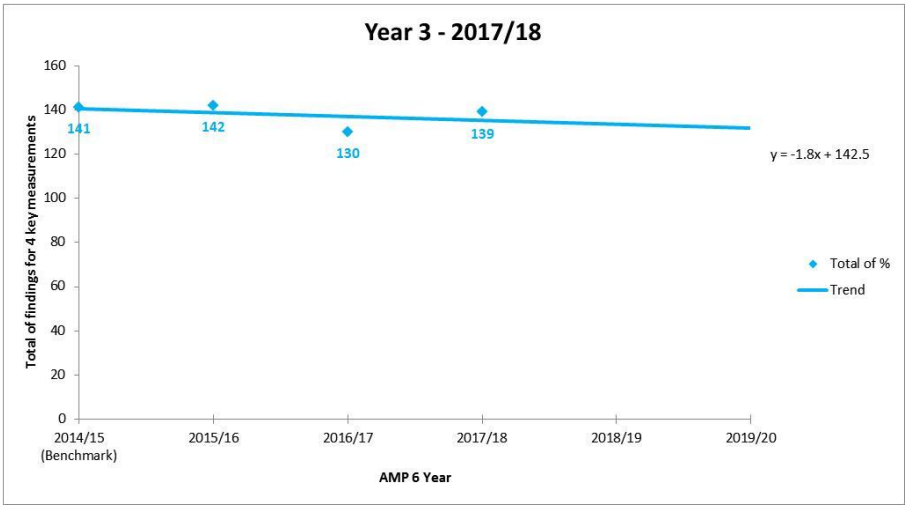
The forecasts for 2018/19 and 2019/20 are based on the assumption that the most recent performance is the best available evidence to assess future performance and on this basis we are forecasting to meet this performance commitment.

T3: Thames Water will engage with its customers to build understanding of the TTT project. Thames Water will liaise with the IP on its surveys of local communities impacted by construction (Non-Financial PC)

We have refined the methodology this year to make it clearer how we calculate an improving trend from the beginning of the AMP. The new method statement was approved by our Customer

Challenge Group on 25 April 2018. This does not require a corrigendum as it does not change either the wording of the performance commitment or the target.

The new methodology involves summing the percentage scores of residential and non-residential customer composite understanding and awareness of the tideway tunnel for each survey year. This is then plotted against previous scores back through the AMP and a linear trend line produced across all years of AMP6. A straight line equation is then used to determine the slope of the line, which is then used as the basis for our 2018/19 and 2019/20 forecasts.



RA1: Minimise the number of written complaints received from customers (relating to charging and billing) (Non-Financial PC)

We committed to minimise the number of written complaints relating to charging and billing, per 10,000 connected properties. Our forecast for 2018/19 reflects a temporary deterioration from our target as a result of the significant cold weather event in March 2018 and the resultant complaints received this year. Our forecast for 2019/20 is in line with our original AMP6 projection with further reduction in complaints.

RA2: Improve handling of written complaints by increasing first time resolution - charging and billing (Non-Financial PC)

We committed to resolving 95% of written complaints relating to charging and billing at the first stage, without the need for escalation. We forecast to maintain this target in 2018/19 and improve performance to 96% in 2019/20.

RA3: Improve customer satisfaction of retail customers - charging and billing service (Non-Financial PC)

We committed to improving our average customer satisfaction score (from a scale of 1 to 5) for the charging and billing services by the household retail business, using our internal CSAT monitor. We have consistently delivered the performance commitment in the first three years of the AMP and are forecasting to continue to deliver in the remaining two.

RA4: Improve customer satisfaction of retail customers - operations contact centre (Non-Financial PC)

We committed to improving our average customer satisfaction score (from a scale of 1 to 5) for the operational contact services by the household retail business, using our internal CSAT monitor.

In 2015/16, we saw significant progress in increasing the satisfaction levels of our customers for contacts relating to bills. However, our Operations call centre performance was below the targeted levels. In 2016/17, we saw performance improve by 0.19 compared to 2015/16; however this was still behind targeted levels. During the first three years of the AMP our operations call centre performance has steadily improved though our 2017/18 score at 4.43, remained 0.14 below target. In July 2017 we had a number of major bursts which led to increased call volumes. This, together with higher than expected numbers of staff leaving, meant that the customer experience was impacted.

We plan to continue to invest in customer improvement measures and our forecasts for the remaining two years to reflect this.

RA5: Increase the number of bills based on actual meter reads (in cycle) (Non-Financial PC)

We committed to increase the proportion of household customers' bills (for water only, wastewater only, and water and wastewater customers) that are based on actual meter reads in cycle (i.e. the meter read is conducted in the same financial year as the bill is issued).

In 2015/16, we achieved 91% against a target of 96%. We made significant improvements to our processes, including a fix to our billing system. As a result, our performance improved and in 2016/17 and 2017/18, we outperformed the target of 96%. We are forecasting to deliver our commitment in the remaining two years of the AMP.

RA6: Service incentive mechanism (SIM) (Non-Financial PC)

Although we have improved our performance year on year during the AMP we know that we need to do a lot more if we are to improve our ranking within the industry. We are restructuring our business so that customers will now see us as 'One Thames' with clear lines of accountability for delivering the end-to-end customer experience.

For 2018/19 we have set ourselves some challenging targets to improve customer satisfaction with our services and to reduce the volume of customer complaints. Despite the impact of the recent winter event that caused so much disruption to our services, we are already forecasting an improvement of around 1.5 SIM points for 2018/19. We forecast a further improvement in 2019/20.

Regarding 2019/20, it is understood that there will be no industry wide customer satisfaction surveys for SIM and that CCWater is proposing a change to complaints reporting. Thus reporting SIM performance in 2019/20 will not be possible.

We are looking forward to working with Ofwat and other companies on finalising the detailed survey design for C-MeX as we understand that factors that may influence the results are being tested in the pilot such as socio demographic, sample size and channels.

RB1: Implement new online account management for customers supported by web-chat (Penalty only ODI)

Table 25 – RB1: Implement new online account management for customers supported by web-chat

Forecast year	2018/19	2019/20
Performance commitment level	Online self-service channel	Online self-service channel
Forecast performance level	Online self-service channel	Online self-service channel
Performance commitment level met	Yes	Yes
Underperformance penalty deadband	CRMB billing system does not 'go live'	CRMB billing system does not 'go live'
Underperformance penalty incentive rate	£6.5m	£6.5m Additional £20.5m applicable in Year 5 (total 2015-20 allowed costs in ACTS adjustment plus premium)
Underperformance penalty	No penalty	No penalty

In September 2014 we launched our Online Account Management (OAM) service allowing customers to sign up and use services on our website, such as online billing. Since then we have been enhancing OAM giving customers access to services such as direct debit set up and meter read usage trends online.

In January 2018 we launched our WebChat PopUps which are now live across 22 pages of our website.

Our experienced team is driving the delivery of the full Customer Relationship Management and Billing system. Based on the programme's current approach, its plans and the progress that we have made to date, notwithstanding that there are still risks which have mitigating action in place, we expect to go live within both the timescales and scope set out in the RB1 definition. Therefore our forecast states that we will not incur a penalty.

RC1: Increase the number of customers on payment plans (excluding Thames Tideway Tunnel) (Non-Financial PC)

We committed to increase the number of customers on payment plans, measured as the percentage of customers (water only, wastewater only, and water and wastewater) paying their bill using a direct debit payment plan. We have consistently delivered the performance commitment in the first three years and are forecasting to deliver our commitment in the remaining two years of the AMP.

RC2: Increase cash collection rates (excluding Thames Tideway Tunnel) (Non-Financial PC)

We committed to increase our cash collection rates, measured as the percentage of cash collected from the billing in that year. Our cash collection assumption was based on a combined household and non-household collection rate. Following the transition of the billing and collection from non-household customers during 2016/17 to an independent retailer, we experienced a dip in the overall collection rates.

For the cash collection rate for the last two years of the AMP, which is household performance only, we are forecasting to be ahead of our performance commitment in 2018/19 and slightly adverse in

2019/20. In order to enable our plans to provide industry leading support to our most vulnerable customers in AMP7, we will be investing significantly in engagement with the Local Authority / Housing Association customer segment and we are predicting that a related change to our cash collection operating model will slightly adversely impact our collection performance in 2019/20.

Asset health assessment – water and wastewater

The method for calculating asset health is set out in our "AMP6 Outcomes Reporting Policy – Annex 1" which is published on our company website. For each measure we have defined a:

- Reference level – this is the target level for the sub-measure as defined in the PR14 determination;
- Control limit – this provides a deadband for performance for the sub-measure, similar to the use of upper control limits for serviceability in AMP5; and
- Failure threshold – in line with our PR14 business plan proposals, where we stated that a "significant failure of one sub-measure would result in a movement from stable to marginal status", we have set this threshold to identify a significant failure for each sub-measure.

The control limits and failure thresholds are set out in our "AMP6 Outcomes Reporting Policy – Annex 2" which is published on our company website. The composite Asset Health assessments are based on:

- The position of post-mitigation performance for each sub-measure compared to the reference level, control limit and failure threshold; and
- The number of measures with post-mitigation performance in each position.

Asset health – water sub-measures

Two sub-measures will not be included in the annual assessment:

- Planned Network Rehabilitation (WB1) has a reference level to be achieved by the end of the AMP6 period; on an annual basis we will provide information on progress towards this target; and
- Water Quality complaints (WB2) for hardness, which is a monitoring only sub-measure, is not included in the annual assessment of Asset Health.

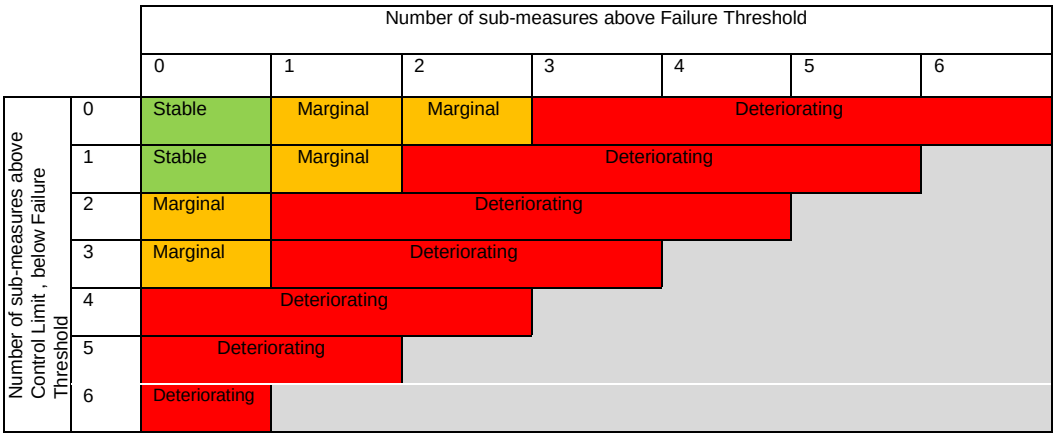


Figure 1 - Asset Health assessment matrix (water infrastructure and non-infrastructure) Source: Thames Water

WB1: Asset health water infrastructure (Penalty only ODI)

Table 26 - WB1: Asset health water infrastructure

Forecast year	2018/19	2019/20
Performance commitment level	Stable	Stable
Forecast performance level	Marginal	Marginal
Performance commitment level met	No	No
Underperformance penalty deadband	Marginal	Marginal
Underperformance penalty rate	£4.675m for each status decrement	£4.675m for each status decrement
Underperformance penalty	Stable decrement to Marginal equates to £4.675m	Stable decrement to Marginal equates to £4.675m

The forecasts for 2018/19 and 2019/20 are in line with historic performance. The Marginal assessment is due to unplanned interruptions to supply of greater than 12 hours. Our approach has been to take the average (mean) of the last 10 years and assume that this is our forecast for 2018/19 and 2019/20. This gives 6704 properties on average and is higher than our asset health sub-measure failure threshold of 4756 properties. As it is higher than the failure threshold, this automatically triggers Marginal asset health and ODI penalty of £4.675m in both years.

We have reported performance higher than the failure threshold in each year of AMP6 to date and so have already incurred a penalty of £4.675m in each of the first three years for this measure. Notwithstanding efforts to improve our incident response, the current view is that this level of performance for supply interruptions is likely to continue in the remaining years of AMP6 so our forecast for the remaining years remains at Marginal.

We forecast that no other measures will exceed the reference levels.

The APP6 commentary below gives further detail relating to the other sub-measures associated with this performance commitment.

WB2: Asset health water non-infrastructure (Penalty only ODI)

Table 27 – WB2: Asset health water non-infrastructure

Forecast year	2018/19	2019/20
Performance commitment level	Stable	Stable
Forecast performance level	Stable	Stable
Performance commitment level met	Yes	Yes
Underperformance penalty deadband	Marginal	Marginal
Underperformance penalty rate	£4.675m for each status decrement	£4.675m for each status decrement
Underperformance penalty	None – we are meeting the performance commitment level	None – we are meeting the performance commitment level

The forecasts for 2018/19 and 2019/20 are in line with historic performance and target level performance.

The APP6 commentary below gives further detail relating to the sub-measures associated with this performance commitment.

Asset health – wastewater submeasures

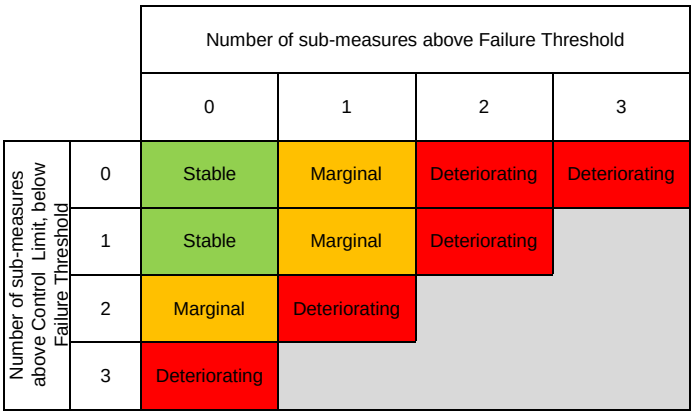


Figure 2 - Asset Health assessment matrix (wastewater non-infrastructure) Source: Thames Water

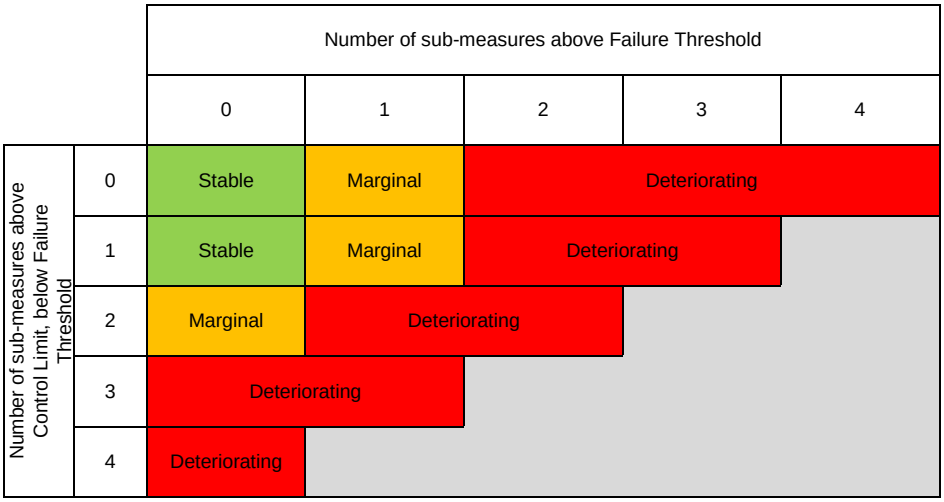


Figure 3 - Asset Health assessment matrix (wastewater infrastructure) Source: Thames Water

SB1: Asset health wastewater non-infrastructure (Penalty only ODI)

Table 28 – SB1: Asset health wastewater non-infrastructure

Forecast year	2018/19	2019/20
Performance commitment level	Stable	Stable
Forecast performance level	Stable	Stable
Performance commitment level met	Yes	Yes
Underperformance penalty deadband	Marginal	Marginal
Underperformance penalty rate	£4.535m for each status decrement	£4.535m for each status decrement
Underperformance penalty	None – we are meeting the performance commitment level	None – we are meeting the performance commitment level

The forecasts for 2018/19 and 2019/20 are in line with historic performance.

The APP6 commentary below gives further detail relating to the sub-measures associated with this performance commitment.

SB2: Asset health wastewater infrastructure (Penalty only ODI)

Table 29 – SB2: Asset health wastewater infrastructure

Forecast year	2018/19	2019/20
Performance commitment level	Stable	Stable
Forecast performance level	Stable	Stable
Performance commitment level met	Yes	Yes
Underperformance penalty deadlband	Marginal	Marginal
Underperformance payment penalty rate	£4.535m for each status decrement	£4.535m for each status decrement
Underperformance penalty	None – we are meeting the performance commitment level	None – we are meeting the performance commitment level

The forecasts for 2018/19 and 2019/20 are in line with historic performance. Please refer to the App6 commentary below in relation to the sub-measures associated with this performance commitment.

3 APP6: sub-measures

Water – asset health sub-measures

WB1.1: Total bursts

The forecasts for 2018/19 and 2019/20 of 8,840 are based on aligning forecasts to the committed AMP6 performance levels.

WB1.2: Unplanned interruptions to customer >12 hours (DG3)

See commentary for WB1: Asset health water infrastructure.

WB1.3: Iron mean zonal non-compliance

The forecasts for 2018/19 and 2019/20 are in line with target level performance. Forecasting water quality failures is challenging as the metric is impacted by the location of the failing asset and the failing parameter. There is no evidence from recent historic performance to suggest the original forecast target level performance for AMP6 should be changed.

WB1.4: Inadequate pressure (DG2)

See commentary for WB4: Properties experiencing chronic low pressure.

WB1.5: Planned network rehabilitation (kilometres)

Forecast lengths of mains rehabilitation are in line with the currently forecasted programme of works of the principal works provider Eight2O. Additional contributory lengths rehabilitated by other business units (other than Eight2O) have been included in the forecast totals in line with forecasted programmes of work. Additional lengths of mains rehabilitated by other uncaptured business units may be reported in remaining years where identified. The current profile of work is forecast to outperform the current AMP end target of 650km.

WB1.6: Customer complaints discolouration white water (nr per 1000 population)

The forecasts for 2018/19 and 2019/20 are in line with target level performance.

WB2.1: Disinfection index (DWI)

The forecasts for 2018/19 and 2019/20 are in line with target level performance.

WB2.2: Reservoir integrity index

The forecasts for 2018/19 and 2019/20 are in line with target level performance.

WB2.3: DWQ compliance measures - turbidity (number of sites)

The forecasts for 2018/19 and 2019/20 are in line with target level performance.

WB2.4: Process control index

The forecasts for 2018/19 and 2019/20 are in line with target level performance.

WB2.5: DWQ compliance measures – enforcement actions

The forecasts for 2018/19 and 2019/20 are in line with target level performance. There are events for which we are undergoing assessment by the DWI and which could potentially lead to an enforcement order but we are assuming zero as we do not have the final assessment.

WB2.6: Water quality complaints for chlorine (nr per 1,000 population)

The forecasts for 2018/19 and 2019/20 are in line with historic performance. This has been reported to 2 decimal places in line with the reference level for this performance commitment.

WB2.7: Water quality complaints for hardness (nr per 1,000 population)

The forecasts for 2018/19 and 2019/20 are in line with historic performance. This has been reported to 2 decimal places in line with WB2.6. This sub-measure is monitored only.

Wastewater – asset health sub-measures

SB1.1 - Unconsented pollution incidents (cat 1, 2 and 3): sewage treatment works (STWs), storm tanks, pumping stations and other

The forecasts for 2018/19 and 2019/20 are consistent with targets to achieve an Environment Agency 4 Star rating in line with our stated strategy. We have improved our performance toward category 1-3 non-infra pollutions in 2017/18 and we continue to improve performance by delivering initiatives through the Compliance Steering Group. The forecasts are in line with 2015/16 performance which we believe is the best proxy for future performance. The assumption is that there will be a continuation of 2018/19 performance into 2019/20.

SB1.2 - Sewage treatment works discharges failing numeric consents %

The forecast for 2018/19 is slightly higher than our current AMP6 average performance level due to four failures at our sewage works. This has led to an increase in our forecast to five failing works. Our root cause analysis and compliance actions plans have allowed us to reduce our forecast of five for 2018/19 to three failures in 2019/20.

SB1.3 - Total population equivalent (PE) served by sewage treatment works failing look-up table consents

We have had one failure so far in 2018/19 at Wolverton Townsend STW, a site with a PE of 21. Our company total PE is 15,520,559, resulting in 0.0001% failure against this sub-measure. This sub-

measure is reported to 2 decimal places, so the actual value will be displayed in the tables as 0.00% and the committed performance level met as “no”.

SB2.1 - Number of sewer collapses

The forecasts for 2018/19 and 2019/20 are in line with current performance and are indicative of future investment and expected performance.

SB2.2 - Number of sewer blockages

The forecasts for 2018/19 and 2019/20 are in line with current performance and are indicative of future investment and expected performance.

SB2.3 - Pollution incidents (cat 1-3)

The forecasts for 2018/19 and 2019/20 are based on a three-year average which means we are forecasting to be above the reference level but within the control limit.

SB2.4 - Properties internally flooded

The forecasts for 2018/19 and 2019/20 are in line with the most recent reporting and the assumption is that this is the best available evidence by which to assess future performance.

4 APP31: past performance

In addition to the information provided in our APP31 table commentary, we will also provide further reflection on our AMP6 performance in the September submission of our business plan. This will form part of our response to the IAP question on accounting for past performance. Our response will set out the lessons we have learnt from our past performance and the additional measures we have put in place to give our stakeholders confidence in our ability to deliver our 2020-25 plan.

We have set out below commentary to explain how we are performing or forecast to perform over the 2015-20 period on the lines in APP31. We have:

- Provided details of each incident escalated to CCWater or Ofwat or WATRS[6] and identified where complaints have been upheld by Ofwat and WATRS;
- Provided a brief description of each major incident including details of the nature, duration and scale of the disruption;
- Provided a brief description of each category 1 and 2 pollution incident;
- Commented on the trends in actual and forecast performance for category 3 pollution incidents, compliance with discharge permits and sludge disposal;
- Commented on the trends in actual and forecast performance for compliance with DWI statutory requirements; and
- Provided brief details of each completed prosecution, caution or undertaking by the EA, DWI or Ofwat.

We will set out our understanding of the drivers of our past performance, the lessons learned and any additional measures we have put in place to ensure we maintain confidence that we can successfully deliver the 2020-25 business plan in our PR19 business plan submission.

Line 1: Stage 1 complaints received

The volume of complaints that we expect to receive through the remainder of AMP6 derives from the same modelling that we have used for our projected SIM performance in Table R10. At this time, the forecast for 2018/19 is projected to be around 3,000 higher than in the previous year. This has largely been driven by the impact of the significant cold weather event in March 2018 which has resulted in complaints over the first quarter of the 2018/19 year to be higher than expected. Once the results of recovery plans and new complaint reduction initiatives are realised we anticipate that volumes during the second half year will reduce to levels closer to previously modelled. The forecast for 2019/20 assumes that we will deliver the performance in line with our target level of performance for that year.

Line 2: Complaints escalated internally to stage 2

At this early stage our forecast for 2018/19 is projected to be around 300 higher than the previous year. Although actual resolution at the first stage of the complaints procedure continues to improve, the absolute number of second stage complaints has been impacted by overall complaint volumes as

[6] The Water Redress Scheme who independently settle disputes between customers and the water and sewerage companies or suppliers of England and Wales.

commented on for line 1. We expect the year end forecast to improve as our initiatives are implemented. The forecast for 2019/20 assumes that we will deliver the performance that we have previously modelled for that year. That is a ratio of 4% of overall complaint volumes.

Line 3: Complaints referred to CCWater

There is no obvious correlation between complaint volumes that we receive and the volume of complaints that are referred to CCWater. As we have increased the speed with which we resolve complaints, we would expect the volume referred to CCWater to also reduce. However, as the overall volume of complaints for 2018/19 is projected to be higher than the previous year, we have cautiously projected an outturn for 2018/19 similar to 2017/18 and continued this figure into 2019/20.

Line 4: Investigations opened by CCWater

Volumes were in single figures earlier in AMP6 with a zero return for 2017/18. As complaint resolution continues to improve, we see no reason for the zero return not continue through 2018/19 and 2019/20.

Line 5: Complaints investigated by Ofwat or WATRS

Annual volumes of complaints investigated by Ofwat are negligible and we expect that trend to continue throughout the remainder of AMP6.

Volumes of WATRS complaints during the earlier part of the AMP increased as consumers became aware of the availability of the service. The highest annual volume was in 2017/18 despite an overall reduction in complaints. As we continue to improve complaint resolution levels throughout the remaining years in AMP6 we would anticipate volumes in this area decreasing. However, we have remained cautious considering the lack of a direct correlation between WATRS complaint volumes and overall complaint volumes and have therefore projected the same volume for 2018/19 and 2019/20 as in 2017/18.

All but two of the entries in line 5 relate to complaints investigated by WATRS. Of these 57 were upheld over the period April 2015 to March 2018.

Line 6: Total number of major incidents

In 2017/18 there were no major water quality events however there were three ‘Category 1’ events by the EA/NRW.

Table 30: details of major incidents

Event No	Reported Date & Time	Location	Premises_ (Tier2)	Water Env. Impact Level	Summary
1560658	11/10/2017	Tinsley Green	Sewage Treatment Works	Category 1	Nature: Unconsented discharge of sewage from storm lagoon caused by control failure of storm pump; Duration: <1 day Scale: Reduced dissolved oxygen and elevated ammonia were recorded in the receiving watercourse and a significant fish kill was

Event No	Reported Date & Time	Location	Premises_ (Tier2)	Water Env. Impact Level	Summary
					recorded Resolution: Pump control repaired and working
1568667	19/11/2017	Bedgrove	Foul Sewer	Category 1	Nature: Unconsented discharge/overflow of sewage due to a sewer blockage caused by root ingress Duration: < 1day Scale: Reduced water quality was recorded for approximately 800m, and 250 dead bullhead fish were recovered from the watercourse. Resolution: Blockage cleared day 1 and root clearance completed 2 days later. Sewer patch relined.
1573699	16/12/2017	Thamesmead	Sewage Treatment Works	Category 1	Nature: Escape of activated sludge from treatment plant caused by structural failure of a transfer pipe Duration: < 1 day Scale: Adjacent TWUL nature reserve (Protected water vole habitat) flooded Resolution: Voles relocated whilst nature reserve cleared. Pipe replaced

Line 7: Number of Category 1 & 2 Serious Pollution Incidents

The details on category 1 incidents are set out in Table 30 above.

Table 31: Details of category 1 & 2 pollution incidents

Event No	Reported Date & Time	Location	Premises_ (Tier2)	Water Env. Impact Level	Summary
1529188	07/06/2017	Houndsden Gutter, Grange Park	Foul Sewer	Category 2	Nature: Unconsented discharge of sewage from a blocked foul sewer that overflowed into a surface water sewer and thence to river Duration: Intermittent over several days Scale: Limited impact on receiving water quality Resolution: Blockage of FOG (fats oils and greases) in the foul sewer cleared
1536438	03/07/2017	Fleet STW	Sewage Treatment Works	Category 2	Nature: Permitted discharge of treated effluent contained elevated concentration of ammonia Duration: < 1 day Scale: No impact beyond elevated concentration in receiving water Resolution: Caused by a temporary issue with sludge processing, quickly resolved
1538258	10/07/2017	Grandon Lodge	Foul Sewer	Category 2	Nature: Unconsented escape of sewage from a partially collapsed and blocked foul sewer Duration: intermittent, a series over several days Scale: Water quality impacted over some 900m Resolution: The partially collapsed section was repaired and various FOG blockages removed.
1538487	10/07/2017	Chineham	Surface Water Outfall	Category 2	Nature: Unconsented escape of sewage, caused by blockage, via a surface water sewer Duration: < 1 day Scale: Several fish killed in watercourse Resolution: Network investigated and a blockage removed
1549873	22/08/2017	Barking	Foul Sewer	Category 2	Nature: Unconsented escape of sewage sludge

Event No	Reported Date & Time	Location	Premises_ (Tier2)	Water Env. Impact Level	Summary
					from a burst sludge transfer main between Beckton and Riverside STWs Duration: < 1 day Scale: 2.5km of watercourse impact, including water vole habitat Resolution: Alternative transfer main in use, repair to damaged main effected in October. Affected watercourse and land clean-up completed
1560658	11/10/2017	Tinsley Green	Sewage Treatment Works	Category 1	See Table 30
1561806	16/10/2017	Mary Close	Foul Sewer	Category 2	Nature: Unconsented discharge of sewage caused by a sewer blockage Duration: < 1 day Scale: Adversely impacted water quality Resolution: A blockage of FOG and rag in the foul network was identified and cleared the same day
1562908	20/10/2017	Egham Wick	Foul Sewer	Category 2	Nature: Unconsented discharge of sewage caused by a sewer blockage Duration: <1 day Scale: Adverse impact on water quality for 825m, and 25 dead fish recovered Resolution: A blockage of rag in the foul network was identified and cleared the same day
1568667	19/11/2017	Bedgrove	Foul Sewer	Category 1	See Table 30
1573699	16/12/2017	Thamesmead	Sewage Treatment Works	Category 1	See Table 30

Line 8: Number of Category 3 Pollution Incidents

We have improved our performance toward reducing category 3 pollutions in 2017. Our total for category 1-3 (303 from sewage-related assets) compares favourably with the control limit of 340. We continue to improve the environmental monitoring of our network, proactive planned maintenance and initiatives being delivered by the Compliance Steering Group.

Forecast data is in line with maintaining our current position for the rest of the AMP.

Line 9: Discharge permit compliance

In 2016 we had a total of eight failures at two water and six wastewater sites resulting in a penalty being accrued. Following this, we amended our systems and feedback processes to improve our compliance performance. This resulted in a reduction in the number of failures at our sewage treatment works to two in 2017 and no failures at water treatment sites.

The forecast for water treatment works remains at zero failures for the rest of the AMP.

Four of our sewage works suffered failures in the first half of 2018 so we have increased the forecast to five failures for the whole of 2018. Our root cause analysis and compliance action plans have allowed us to reduce our forecast to three failures in 2019/20.

Line 10: Satisfactory sludge use/disposal

Forecasts have been set In line with historic performance which has been at 100% compliance since at least 1997/98.

Line 11: Prosecutions for breach of relevant environmental requirements enforced by EA/NRW

This has been calculated based on the number of prosecutions completed in each year, from April to March. In 2015/16 there were three prosecutions for Tring STW, Princes Risborough STW, and Danson Park.

In 2016/17 there was one prosecution. However this was a consolidated case which consisted of six separate prosecutions and has therefore been recorded as six in the table. The six prosecutions which for breaches at Little Marlow STW, Arborfield STW, Aylesbury STW, Henley STW, Didcot STW, and Littlemore SPS.

There were no prosecutions in 2017/18.

Line 12: Enforcement undertakings (EU) for breach of relevant environmental requirements from EA/NRW

This has been calculated based on the number of EUs accepted in each year between April and March. In 2015/16 and 2016/17 there were no EUs accepted.

In 2017/18 three EUs were accepted. These were for Honeymill Bridge SPS, Luton Hoo SPS and Beddington STW.

Line 13: Formal cautions for breach of relevant environmental requirements from EA/NRW

No formal cautions have been received in this period.

Line 14: Formal cautions for breach of drinking water quality requirements

No formal cautions have been received in this period.

Line 15 Completed prosecutions for breach of drinking water quality requirements

No formal prosecutions have been received in this period.

5 WS15, WWS15, DMMY10: wholesale totex outperformance sharing

For tables WS15 and WWS15 Ofwat provided prepopulated data in orange cells. We emailed Ofwat on 31 May 2018 to advise them that some of the prepopulated data was inconsistent with our 2016/17 APR.

During our 2017/18 year end process we identified that revisions were required to some previously reported numbers in order to report a more accurate cumulative totex for AMP6. The revisions were included in our APR for 2017/18 and are detailed below. These have also been reflected in WS15, WWS15 and DMMY10.

1. Third party costs: In 2016/17 we restated third party costs for the year 2015/16, because third party costs reported in 2016/17 correctly included the costs of bulk supplies and inset arrangements however it did not include the costs associated with other third party activities as set out in appendix 1 of RAG 4.07. Table 4B as published in 2016/17 was also inconsistent with tables 4D & 4E in respect of third party capex. In our 2017/18 submission of the APR we therefore restated the third party costs incurred in 2016/17 and 2015/16 to calculate accurate cumulative third party costs for AMP6 to date. Please see the effects of this amendment in Table 32:

Table 32 - Third party costs amendment

Third party costs as published in year:	Cumulative £m		2017/18 £m		2016/17 £m		2015/16 £m	
	Water	Waste	Water	Waste	Water	Waste	Water	Waste
2015/16	0.82	5.28					0.82	5.28
2016/17	6.01	7.15			2.79	6.59	3.22	0.57
2017/18	19.51	12.49	6.09	4.14	7.09	4.48	6.33	3.87

2. TTT Other rulebook adjustments: Other rulebook adjustments for TTT includes an amount to reflect cost of any land acquired that is subject to a 100:0 cost sharing rate. These costs are excluded from the menu in line with the Final Determination. In 2016/17, costs amounting to £28.4m were omitted from table 4B in error; these costs were correctly included in capital expenditure within table 2B; we have amended the cumulative column for TTT in our 2017/18 submission of the APR to account for these costs. Also, the 2016/17 figure omitted certain statutory and non-statutory compensation payments totalling £8.4m This resulted in a total adjustment of £28.4m Please see the effects of this amendment in Table 33:

Table 33 - TTT disallowable costs amendment:

TTT disallowable costs as published in year:	Cumulative £m	2017/18 £m	2016/17 £m	2015/16 £m
	TTT	TTT	TTT	TTT
2015/16	23.60			23.60

2016/17	29.50		5.90	23.60
2017/18	55.90	- 2.00	34.30	23.60

Transition expenditure (WS15, WWS15 & DMMY10)

We have adjusted the prepopulated data for transition expenditure to reflect actual values.

Leakage adjustment (WS15)

We acknowledge that we spent money inefficiently on leakage during AMP6. The operation of the PR14 totex reconciliation mechanism would mean that we would be able to recover roughly 50% of this excess expenditure from customers through higher prices in AMP7. We therefore proposed to make a further £46m reduction to AMP7 revenues to ensure that customers do not bear this additional cost.

We have made this adjustment through the Revenue adjustments feeder model, which therefore affects row 26 of table WS15. Without this adjustment, row 26 would be +£40.001m, instead of the -£8.801m shown in the table, a reduction of £48.802m. Commentary of the Revenue adjustments feeder model shows how the £46m corresponds to the £48.802m adjustment in this table. For reference, we also attach a version of WS15 without this adjustment [WS15 TMS 4.xlsx].

Business rates IDoK (WS15)

As shown in section F of WS15, our business rates in 2017/18, 2018/19 and 2019/20 have exceeded the Water business rate constant specified in the PR14 Final Determination. However, we estimate that the excess does not meet the materiality threshold for an IDoK, and therefore we have not included an adjustment due to applying the Business rates IDoK. Therefore, we have entered zero in row 23.

Counters Creek (WWS15)

As discussed in our annual report (page 37), and in the commentary of tables App5 and App6, our alternative solution for SB3 (Properties protected from flooding due to rainfall, including Counters Creek project) saves £124.1m, compared to the baseline totex associated with Counters Creek project in the PR14 Final Determination.

We are proposing that 100% of this saving should be returned to customers, rather than just 50%. We propose to do this in two stages:

1. Remove the effect of the totex outperformance from the totex reconciliation model, to ensure that none of the outperformance is shared with customers through this route.
2. Remove 100% of the allowance from the RCV, as a midnight adjustment at the end of AMP6 (see RCV adjustments feeder model commentary).

The file “180613 Counters Creek adjustments v0.1.xlsx” shows how these adjustments are calculated, including the comparisons between our current totex forecasts, and the corresponding PR14 Final Determination allowance and baseline.

In order to remove the totex outperformance from the totex reconciliation model we have increased our actual totex in the totex reconciliation model by £124.1m, so that it is equivalent to the PR14 FD Final Determination Baseline. This means that no outperformance due to this component is causing any adjustments to the totex reconciliation adjustments. For reference, in our submitted totex menu PR14 reconciliation model [Totex-Menu-2016-05-17-change-log-removed TMS 7 CC adj v2.xlsx] we have included a switch ("Counters Creek adjustments" tab, cell G11) to show the impact of this adjustment.

The data in section G (rows 19 – 22) of WWS15 include this adjustment to remove any totex outperformance associated with Counters Creek.

Totex menu PR14 reconciliation model

We have provided two Totex menu PR14 reconciliation models:

- [Totex-Menu-2016-05-17-change-log-removed TMS 7 CC adj v2.xlsx]: This calculates the adjustments associated with the Water and Wastewater price controls (used to populate WS15 and WWS15). This includes an adjustment to remove any outperformance associated with Counters Creek, as discussed in commentary for WWS15.
- [Totex-Menu-2016-05-17-change-log-removed TTT 6.xlsx]: This calculates the adjustments associated with the TTT price control (used to populate Dmmy10).

6 R9: household retail revenue

The modification factors used in block G of table R9 are those seen on the 'F_Outputs' tab in the final Ofwat PR14 Financial model (pap_tec201412pr14finmodel_tmsttip.xlsb). These modification factors include the allowed revenue per customer attributable to the Thames Tideway Tunnel Infrastructure Provider which was not included in the modification factors seen in the PR14 FD letter to Thames Water dated 12 December 2014.

7 R10: Service incentive mechanism

Within the pre populated data for 2015/16 (PR14 Service Incentive Mechanism) we note that there remain a number of discrepancies. These discrepancies are outlined below:

- Line 4 – the 4th survey score was incorrectly pre-populated as 4.08 and should be 4.12. This is evidenced in the McCallum Layton report "Ofwat Customer Experience Survey Q4 2015/16", March 2016.
- Line 5 – as a result of the amended survey score in Line 4, the qualitative SIM score (out of 75) is recalculated as 58.13 and not 57.94 (revised automatically calculated value within table).
- Line 6 – the quantitative composite score was incorrectly prepopulated as 123.95 and should be 127.94. This is evidenced in our final annual return submission for 2015/16.
- Line 7 – as a result of the amended quantitative SIM score in line 6, the quantitative composite SIM score (out of 25) is recalculated as 18.60 and not 18.80 (revised automatically calculated value within table).

8 WS13, WWS13, DMMY11: wholesale revenue forecast incentive mechanism

We have provided two wholesale revenue forecast incentive mechanism (WRFIM) PR14 reconciliation models:

- [WRFIM - Full AMP (excl TTT) v5d 080618 (June version).xlsx]: This calculates the adjustments associated with the Water and Wastewater price controls (used to populate WS13 and WWS13).
- [WRFIM - Full AMP TTT only v5d 190718 (June version).xlsx]: This calculates the adjustments associated with the TTT price control (used to populate Dmmy11).

In the 11 July 2018 version of our company specific PR14 reconciliation data tables Ofwat split out TTT from wholesale waste. In doing so we note that the K factors on WWS13 have been incorrectly calculated as a weighted average hybrid K factor, incorporating both wholesale waste and TTT combined. As a result of the K factor being populated incorrectly, the allowed revenue on WWS13 is also incorrect.

We have amended the wholesale wastewater K factors on WWS13 so that both the K factor and the allowed revenue are accurately shown. Dmmy11 did not require any changes in respect of this, as it is correctly showing the TTT only K factors and consequently the correct TTT only allowed revenue.

In populating our data tables we noted that the TTT version of the WRFIM model has a 0:50:50 profile for the blind year (end of AMP5) adjustment, whereas in the PR14 Reconciliation data table suite the pre-populated profile on the 'F_Inputs 2' tab is 0:0:0, which feeds through to table Dmmy11. As there is no blind year adjustment for TTT there is a nil impact of this discrepancy.
In order to ensure internal consistency we have amended the TTT WRFIM model to show 0:0:0 which is consistent with the 'F_Inputs 2' tab and table Dmmy11.

WRFIM commentary

This section provides a commentary on the Wholesale Revenue Forecasting Incentive Mechanism (WRFIM) model published on 13 July 2018. The WRFIM model is one component of the PR14 Reconciliation submission which sits within the wider PR19 Business Plan submission due by 3 September 2018.

The WRFIM model monitors the wholesale revenue recovered through our primary charges to both household and non-household customers (the latter via the non-household market retailers) as well as wholesale charges made to developers connecting to our network. It compares this to the revenue allowed in the PR14 Final Determination (FD) and any over or under-recoveries against the allowed revenue are adjusted for in the revenue allowance in subsequent years.

It is designed to ensure that, across the five year price control period 2015-2020, water companies recover from customers only what they were allowed in the FD. This is deemed to reflect the revenue levels needed to run the business.

The WRFIM model also incentivises water companies to forecast as accurately as possible by applying a penalty where the difference between what is recovered and what was allowed is greater than 2%.

Application of the WRFIM model: 2015/16 to 2017/18

The inputs into the WRFIM model comprise:

- the initial allowed wholesale revenues and K factors as published by Ofwat in the PR14 FD;
- inflation (RPI as at November each year) as published by the Office for National Statistics;
- the profile to be applied to the blind year adjustment from the price control period 2010-2015; and
- the actual revenue recovered in each financial year as disclosed in our APR.

For the first three financial years of the 2015-2020 price control period (AMP6), namely 2015/16, 2016/17 and 2017/18, our inputs into the WRFIM model have been as originally intended and as per the list above.

This has resulted in the relevant over or under-recoveries against our allowed revenue being adjusted for with a two year lag to ensure that our customers are not paying any more or less than the amount permitted in the PR14 FD.

The comparison of our actual revenue recovered to the allowed revenue for each price control and for each of the first three years of AMP6 can be seen in table 2I of the APR, which has been summarised in Table 34 below.

Table 34 – Comparison of allowed revenue to actual revenue recovered: 2015/16 to 2017/18

Wholesale revenue category	Revenue 2015/16 £m	2016/17 £m	2017/18 £m
Allowed revenue – water	850.734	864.007	882.960

Revenue recovered – water	851.750	861.621	889.583
Over/(under)-recovery – water	**1.016**	**-2.386**	**6.623**
Allowed revenue – wastewater	966.690	978.195	967.002
Revenue recovered – wastewater	990.209	978.672	963.601
Over/(under)-recovery – wastewater	**23.519**	**0.477**	**-3.401**
Allowed revenue – TTT	45.317	50.778	54.445
Revenue recovered – TTT	45.506	50.775	54.352
Over/(under)-recovery – TTT	**0.189**	**-0.003**	**-0.094**

Application of the WRFIM model: 2018/19 to 2019/20

The inputs to the WRFIM model for the two forecast years (2018/19 and 2019/20) are as per those for the three years' of actual data but with a forecast position of RPI as used throughout our PR19 submission. For these two years we are required to forecast our actual revenue recovered and it is at this point that our application of the WRFIM model moves away from the standard approach used in the first three years of AMP6.

During AMP6, water companies have a number of ODIs that either give rewards or penalties for performance against a set of criteria known as PCs. Some companies have ODI rewards and penalties that are applied during the price review period but we have both ODI rewards and penalties that were agreed at PR14 to apply wholly at the end of the price review period and thus would be adjusted for at PR19.

However, in 2018/19 we returned a number of our ODI penalties to customers earlier than required, and this will happen again in 2019/20. These adjustments, which deviate from the original 'end of AMP' format of the performance commitment, are discussed in greater detail below.

In the WRFIM model for the final two years of AMP6 we are therefore forecasting our revenue recovered to be in line with our allowed revenue less any adjustments that take account of the ODI penalties that are being returned early.

Revenue attenuation in 2018/19 for ODI penalties

Our 2018/19 tariffs were set on a revised level of allowed revenue that factored in a number of ODI penalties incurred on wholesale water and wholesale wastewater. After assessing the overall increase in customer bills anticipated in 2018/19 as well as our performance in providing our core services to customers over the first two years of AMP6, we concluded it was suitable to return money to customers early rather than according to the end of AMP target initially established in the FD. This attenuation of revenue ensured customer bills increased by less than five per cent year-on-year.

The ODI penalties returned early in 2018/19 and the calculations that adjusted our 2018/19 allowed revenue are summarised in

Table 35 below.

Table 35 – Calculation of revenue attenuation in 2018/19 due to ODI penalties

ODI reference and description	Penalty value (12/13 prices) 2015/16 £m	2016/17 £m	Total £m	Adjustment (18/19 prices) 2018/19 £m
WB1: Asset Health Water Infrastructure	4.675	4.675	9.350	10.881
WC2: Leakage		8.550	8.550	9.950
WB6: Security of Supply Index (SoSI)		2.265	2.265	2.636
Total penalties – water	**4.675**	**15.490**	**20.165**	**23.466**
SB4: Sewer Flooding – Other Causes	11.700	0.450	12.150	14.139
SC3: STW discharge compliance		2.307	2.307	2.685
Total penalties – wastewater	**11.700**	**2.757**	**14.457**	**16.824**

A financial year average RPI inflation factor was used to restate the ODI penalties from 2012/13 prices to 2018/19 prices. On this basis the factor used was 1.164.

Revenue rebates in 2019/20 for ODI penalties

As a part of the settlement relating to the Ofwat investigation into our leakage performance, we will be adjusting customer bills in 2019/20 to reflect the ODI penalties for leakage and the security of supply index (SoSI) incurred in 2017/18. This means that £23.7m will be given back to customers for these ODI penalties as well as an additional £7m penalty. This money will be returned to customers by way of an identified rebate on their 2019/20 bill.

The ODI penalties that are to be returned early in 2019/20 and the calculation of the total impact on our 2019/20 revenue are summarised in Table 36 below.

Table 36 – Calculation of total revenue to be rebated in 2019/20 due to ODI penalties

ODI reference and description	Penalty value (12/13 prices) 2017/18 £m	Adjustment (19/20 prices) 2019/20 £m
WC2: Leakage	13.050	15.578
WB6: Security of Supply Index (SoSI)	6.795	8.111
Additional punitive penalty	n/a	7.000
Total penalties – water	**19.845**	**30.690**

A financial year average RPI inflation factor was used to restate the ODI penalties from 2012/13 prices to 2019/20 prices. On this basis the factor used was 1.194.

Adjustments to WRFIM penalty calculations in 2018/19 and 2019/20

As mentioned above, for 2018/19 and 2019/20 we are forecasting our revenue recovered to be in line with our allowed revenue less any adjustments that take account of the ODI penalties that are being returned early.

The WRFIM model applies revenue penalties if the actual revenue recovered in any year is more than 2% away from the allowed revenue for that year. This means that we would incur additional revenue penalties under WRFIM in 2018/19 and 2019/20 due to the ODI penalties that we are returning to customers early. The penalties generated by WRFIM in 2018/19 and 2019/20 as a result of this approach are set out in Table 37 below.

Table 37 – WRFIM revenue penalties generated in 2018/19 and 2019/20

Price control	WRFIM revenue penalties (outturn prices)	
	2018/19	2019/20
	£m	£m
Wholesale water	0.393	0.922
Wholesale wastewater	-	-

As the WRFIM revenue penalties are only intended to penalise companies for forecasting errors in the underlying assumptions used when setting tariffs, it is necessary for us to make an adjustment for the early application of specific ODI penalties, as described above.

Therefore, in agreement with Ofwat, our published WRFIM models have been adjusted to factor the ODI penalties returned to customers early into the allowed revenue used in the WRFIM penalty calculation [WRFIM - amended approach for Thames Water].

This has been done by amending the formula for the 'Forecast error' percentage on row 52 of the 'WRFIM – Water' and 'WRFIM – Waste' tabs. The view of the calculation of the forecast error both before and after the change is set out below.

WRFIM penalty calculation: 'Forecast error' formula before adjustment

[Revenue recovered – Allowed revenue] / Allowed revenue

WRFIM penalty calculation: 'Forecast error' formula after adjustment

[Revenue recovered – (Allowed revenue – ODI penalties)] / (Allowed revenue – ODI penalties)

In the formulae above the following lines of the WRFIM model are referred to:

- "Revenue recovered" = Revenue Recovered (RR) on row 41
- "Allowed revenue" = Baseline revenue for calculation of penalties (AR*) on row 39

The values of the "ODI penalties" adjusted for in the second formula are those derived in

Table 35 and Table 36 above. They have been added to the blank cells towards the right of each tab for use in the calculation.

The impact of making this change is that the forecast error no longer exceeds the 2% threshold and the WRFIM penalty calculation within the model does not get activated.

9 RCV adjustments feeder model

Counters Creek

As discussed in the commentary for WWS15, we are proposing to return 100% of any totex outperformance associated with Counters Creek to customers. We have removed any sharing of outperformance from the totex menu reconciliation model. In addition, we are proposing a midnight adjustment to remove 100% of the excess allowance from the RCV at the end of AMP6. The file "180613 Counters Creek adjustments v0.1.xlsx" shows the difference between our forecast totex, and the PR14 Final Determination allowance by year. We have uplifted this to take account of the time value of money (using the PR14 wholesale WACC) to generate an RCV log-down of £133.466m in 2012/13 prices (£151.808m in March 2018 prices). We have included this within "Wastewater ~ Other adjustment to wholesale RCV" in the RCV adjustments feeder model.

SC9 corrigenda adjustment

The SC9 corrigenda indicates that due to a scope change there should be an RCV reduction of £7.269m in 2012/13 prices (£8.268m in March 2018 prices). We have included this within "Wastewater ~ Other adjustment to wholesale RCV" in the RCV adjustments feeder model.

TTT blind year

We have included an RCV adjustment associated with the TTT or £23.068m in 2012/13 prices. The file "180606 TTT 14-15 reconciliation.xlsx" shows how this is calculated. It reflects two items, as described below:

- Land: Our actual spend on TTT land in 2014/15 was less than that assumed in the PR14 Final Determination. After adjusting for time value of money (using the PR14 wholesale WACC), this generates a reduction of £26.993m in 2012/13 prices.
- Non-land: As documented in the letter from Keith Mason to Nick Fincham of September 2015 (attached file "15.09.24 – Nick Fincham – Thames Water – Thames Tideway Tunnel 2014-15 …pdf", for reference), we have included an uplift to the RCV of £3.45m, adjusted for inflation and time value of money to give an uplift of £3.925m in 2012/13 prices.

10 Revenue adjustments feeder model

£46m adjustment due to inefficient totex

As discussed in the commentary for WS15, we have included an additional revenue reduction in AMP7 to ensure that customers do not bear any additional cost associated with inefficient AMP6 leakage expenditure.

Our proposal (as published in paragraph 5.44 of the "Notice of Ofwat's proposal to impose a penalty on Thames Water Utilities Limited") is that the revenue adjustment would be the greater of £46m, or an updated calculation of the actual inefficient expenditure, using the same methodology. As shown in "180614 leakage adjustment calc v0.1.xlsx", our performance in 2017/18 was less inefficient than was assumed in the original estimate of the £46m. Under the same methodology, this would have generated an adjustment of £42m, rather than the £46m originally estimated. Therefore, we have maintained an adjustment of £46m, as the greater number.

The £46m reflects the difference between efficient and inefficient performance in outturn prices. We have therefore converted this into 2012/13 prices (£42.524m), in order to enter into the revenue adjustments feeder model. This is added as an adjustment to the "Water: revenue adjustment from totex menu model" input. This corresponds to £48.802 in 2017/18 CPIH prices (see commentary for WS15).

Rebate associated with 2018/19 leakage penalty

As documented in an email from Sally Irgin to Nick Fincham (1 June 2018, attached as "Fwd: confidential – Version 3 draft notice") we are proposing that the ODI penalties that we incur (both automatic and over and above the collar) for leakage and SoSI in 2018/19 (and also 2019/20 should any penalties obtain) would be returned to customers through a new mechanism (which was not contemplated under PR14). Under this mechanism, one-off rebates would be applied to bills in 2019/20 bills (and again in 2020/21). This mechanism will allow the rebate to be made explicit.

In order to keep the rebate associated with the 2018/19 leakage penalty separate from the remainder of the other revenue adjustments we have provided three versions of the revenue adjustments feeder model:

- [PR19 Revenue adjustments feeder model 01k - July 2018 update TMS 2.1.xlsm]: Includes all the revenue adjustments except that associated with the 2018/19 leakage ODI penalty.
- [PR19 Revenue adjustments feeder model 01k - July 2018 update TMS 2.2.xlsm]: Just includes the revenue adjustment associated with the 2018/19 leakage ODI penalty (being -£27.000m in the "Net performance payment / (penalty) applied to revenue for end of period ODI adjustments ~ Water network plus" input).
- [PR19 Revenue adjustments feeder model 01k - July 2018 update TMS 2.0.xlsm]: Includes all revenue adjustments, including that associated with the 2018/19 leakage ODI penalty. This file is provided for reference, as it corresponds to the total value shown in App27.

We propose that, apart from the 2018/19 leakage penalty, all revenue adjustments should be profiled evenly (in NPV terms) across AMP7 (profile "2", in the Revenue adjustments feeder model).

However, for the 2018/19 leakage adjustment, this will apply as an adjustment to 2020/21 (profile “0”, in the Revenue adjustments feeder model).

The total profiled revenue adjustments that will apply in AMP7 would therefore be the sum of the 2018/19 leakage penalty (applied in 2020/21) plus all other revenue adjustments (applied over AMP7).