love every drop

anglianwater

ANNUAL PERFORMANCE REPORT 2019

Anglian Water Services Limited

glassdoor 2018 BEST PLACES TO WORK EMPLOYEES' CHOICE

WINNER AWARDS 2018 Utility of the Year

Introduction

Annual Performance Report and required regulatory information

In accordance with Ofwat guidance, we present over the following pages the Annual Performance Report (APR), for the year ended 31 March 2019. This provides specific and transparent information on progress on delivery of customer outcomes, service levels, costs and financial performance. The APR is prepared to comply with Condition F of the Instrument of Appointment of Anglian Water Services Limited as a water and sewerage undertaker under the Water Industry Act 1991. Additional commentary on our Outcome Delivery Incentive achievements is explained in the Strategic Report in our separately published Annual Integrated Report, which can be found on our website: www.anglianwater.co.uk.

A full list of Ofwat's disclosure requirements is set out in the section called Ofwat disclosures.

The APR performance tables fall into the following four categories:

1. Regulatory financial reporting
2. Price control and additional segmental reporting
3. Outcome performance summary
4. Additional regulatory information.

Commentary has been included beneath the APR tables to explain significant year on year variances in performance, and to highlight assumptions where appropriate. The subheadings in the commentary refer to the APR table line numbers to aid navigation when reading the spreadsheet version of the APR.

In addition to the above, this report includes the data assurance summary which demonstrates the process carried out by Anglian Water Services to evidence that information provided is reliable.

At the end of the report are the Independent Auditors' Report and our External Assurance Report.

The APR is prepared in accordance with the Regulatory Accounting Guidelines (RAGs) issued by Ofwat, which are based on International Financial Reporting Standards (IFRSs). There are differences between IFRSs and the RAGs and where there is a conflict, the RAGs take precedence.

In this report, Anglian Water Services Limited is also referred to as Anglian Water, AWS or the Company.

The Annual Performance Report was approved by the Board of Directors on 8 July 2019 and was signed on their behalf by:

Peter Simpson
Chief Executive

Scott Longhurst
Managing Director of Finance and Non-Regulated Business

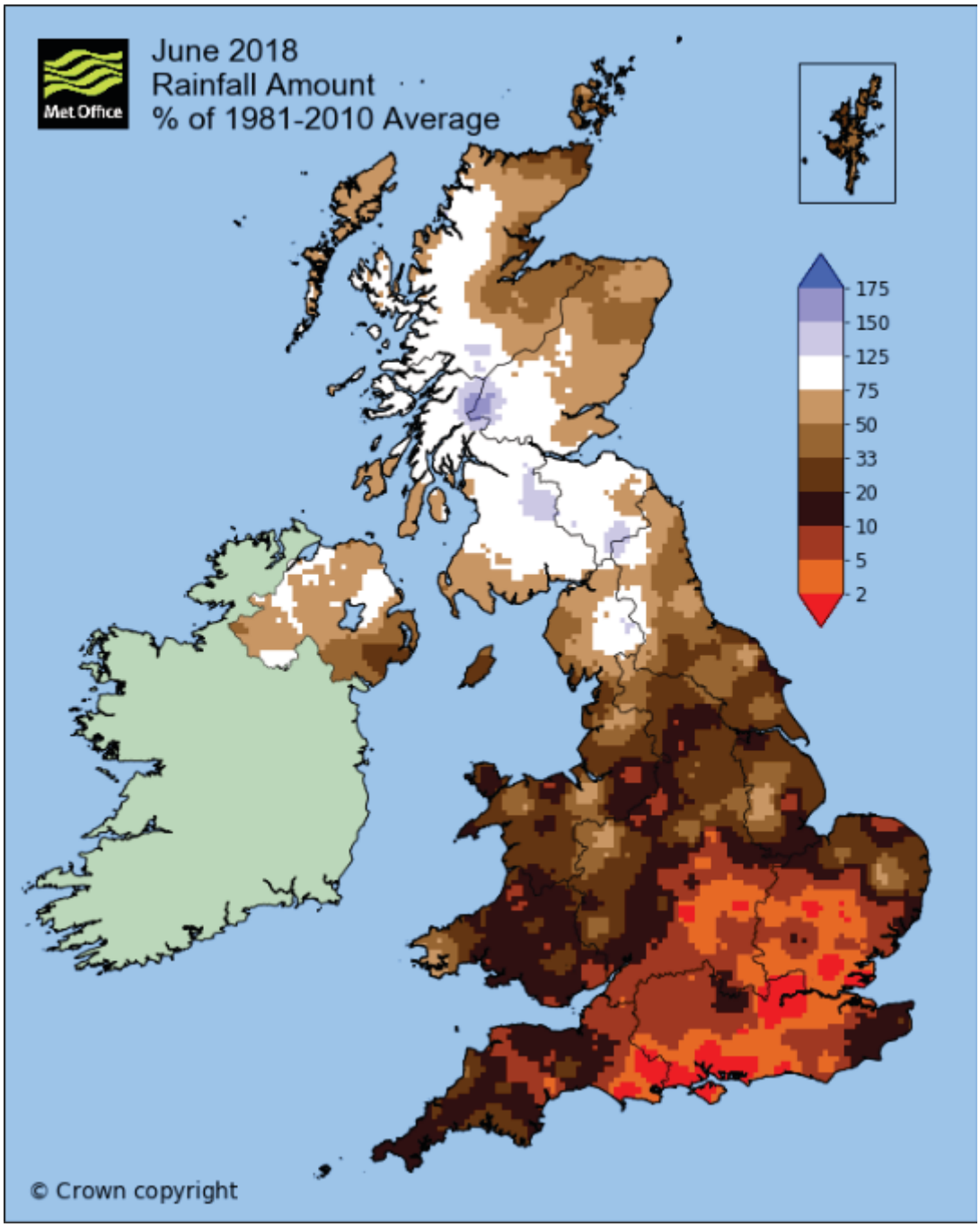
Key Messages

Financial performance

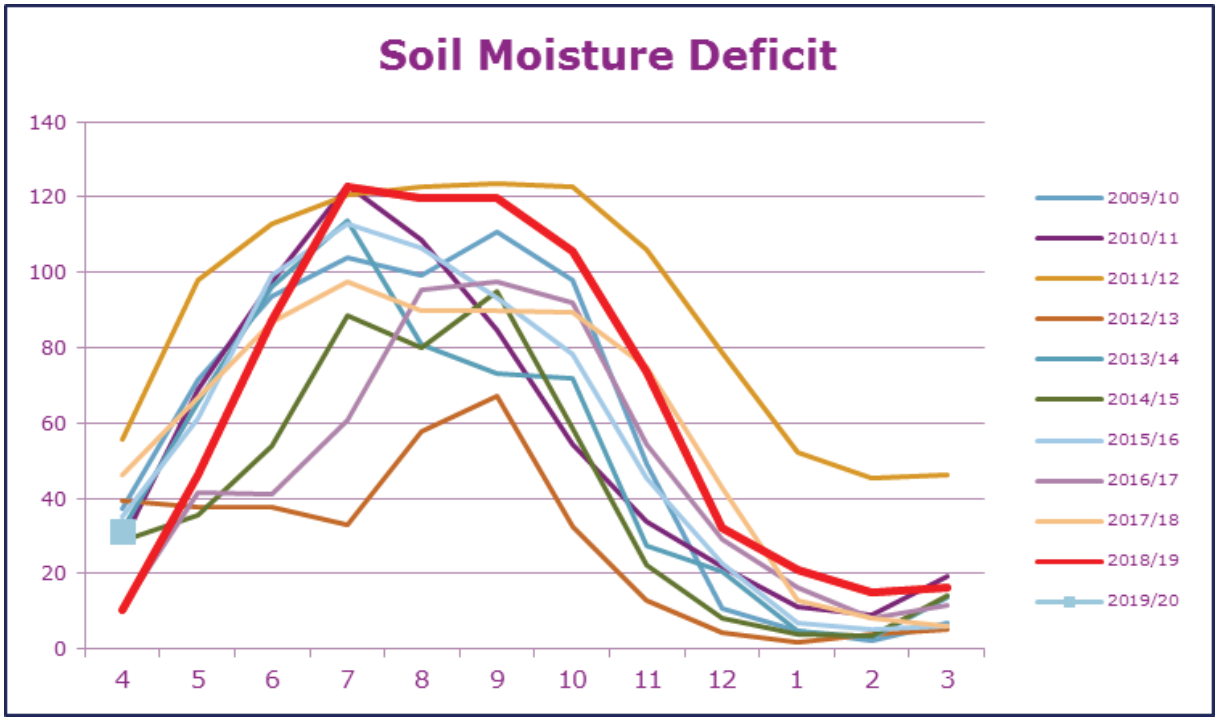
- Appointed revenue for the year was £1,259.9 million, an increase of £31.6 million (2.6 per cent) on 2017/18 – see table 1A.
- Appointed operating profit was £317.9 million, down 5.5 per cent on the previous year (reflecting the impact of the 'Beast from the East' extreme cold weather event, followed by an exceptionally hot, dry summer, and higher depreciation, partially offset by increased revenue) – see table 1A.
- The continuing good progress on a range of operational efficiencies offsets inflationary cost increases – see commentary to table 1A.
- Cash generated from appointed operations was £692.7 million, up £57.0 million on last year, principally because grants and contributions are now included in other income rather than being shown as an investing activity as in previous years. This is due to a change in accounting standard, IFRS 15; underlying economic cash flows of the business remain unchanged – see table 1D.
- The dividend paid was lower and an equity injection was received in the year as part of the directors' previously announced aim of reducing gearing through to 2025.
- A second tranche of Green Bonds was issued – see Board statement of company direction and performance.
- Totex efficiencies were delivered as a direct result of continued focus on innovation and ground-breaking approach to capital delivery alliances – see table 4B.
- Outcome Delivery Incentive (ODI) rewards of £48.5 million were earned over the first four years of the AMP (in 2018/19 prices), including one small penalty in 2016/17 of £0.6 million – see table 3A.
- In 2018/19 we earned ODIs of £14.1million (in 2018/19 prices), meeting our performance level commitments for all but one ODI. All of this will be included within AMP7 price limits. The one we missed was in mean zonal compliance, where our performance remains in line with prior years and the majority of other companies. No penalties are payable as performance is within the deadband.
- In response to Ofwat's challenge on financial transparency, table 1F has formally been introduced into section 1 of the APR. This shows the financial flows of the business on a notional and actual gearing basis for the current year and also an average for the AMP. This table has been subject to assurance from our external auditors.

A hot, dry year

- The summer of 2018 was the UK's warmest since 2006, the driest since 2003 and the sunniest since 1995.
- June was exceptionally dry. The chart below shows that a substantial proportion of our region received less than 10% of normal rainfall.



- We experienced a prolonged spell of widespread warmth from late June to early August, with several days where the maximum temperature exceeded 25°C. The UK's hottest day of the summer was recorded in our region, with 35.6 °C recorded at Felsham, Suffolk, on 27 July.
- A consequence of this unusual period of hot and dry weather was a high level of soil moisture deficit which, following to a relatively dry winter, persisted for the remainder of the year.



How customers benefit from our ODI performance – see table 3A

- We once again beat our leakage target, despite an increase in mains bursts as a result of March 2018's 'Beast from the East' and the hot, dry summer.
- We received the fewest ever number of contacts from customers about the taste, odour and appearance of their drinking water (1.18 per thousand customers).
- We saw a twenty per cent reduction on the prior year in the number of category 3 pollution incidents.
- Serviceability was maintained at 'Green' for all asset classes.

Unrivalled support for the communities we serve

- We achieved the number one position in the customer service league table for the second year running, with a clear gap of 0.05 to the next best company.
- We also achieved our best ever score for the quantitative SIM measure, likely to give us the highest overall SIM score for any company.
- We have now delivered almost two decades of consistent upper-quartile service performance.
- We maintained supplies to all customers during the record breaking period of hot and dry weather in summer 2018, following no impact during 'Beast from the East'.
- We were instrumental in the creation of the water industry's Public Interest Commitment, setting new standards for a social contract with customers and stakeholders.

Planning for the future

- We submitted to Ofwat a £6.5 billion investment plan for 2020-25 (reduced by £64 million following the Government's ban of metaldehyde pesticides in December 2018), supported by more than 80 per cent of customers based on extensive acceptability and affordability engagement and online community research.
- Our plan proposes a circa 30 per cent increase in the investment programme on the current five year period to 2020 - to dramatically reduce leakage from our already industry leading position, protect our region from the risks of drought and flooding, enhance the environment, and meet growth through sustainable improvements to our network - while reducing average bills to customers.

- Our plan was shaped by half a million customer interactions, drawing on 38 channels of communication and contact; ten times more than in AMP6.
- In Ofwat's Initial Assessment our customer engagement was given an 'A' grade, underlining that the plan delivers on customers' priorities.
- A new supply chain alliance is being set up to help deliver a Water Resources Management Plan which totals around £600 million, nearly eight times larger than in the last period, delivering resilience to drought and flooding.

Recognition for excellent all-round performance

- We were named Utility Company of the Year at the Utility Week Awards in December 2018.
- We were named Water Company of the Year at this year's Water Industry Awards.
- We were invited to join Leading Utilities of the World, the gold standard of utility performance.
- We received two awards at this year's prestigious International Water Association Awards, held in Tokyo, in recognition of our ambitious leakage and innovation strategies.
- We were named by Glassdoor as the Best Place to Work in the UK.
- We retained the ROSPA Gold Award for Safety for the 15th consecutive year.

Protecting and enhancing our environment

- Capital investment expenditure has been financed through two further "green" financings in accordance with the green bond principles. Investments were selected from across our total investment book reflecting the measurement of carbon savings at individual project levels.
- We were awarded 'Best Use of Technology for Carbon Reduction' by New Civil Engineer for the Great Dunmow Water Recycling centre project.
- We allocated £783 million to environmental protection and enhancement in our business plan for 2020-25, through the delivery of our Water Industry National Environment Programme (WINEP), expenditure that is more than double the last period.

Board Statement of Company Direction and Performance

This statement explains how the Board of Anglian Water Services Ltd (the Company) sets the long-term ambitions of the Company, to meet the significant challenges facing the business and the region it serves, and its performance against targets in pursuit of these ambitions.

It also explains how customers' and stakeholders' views are an integral part of setting these ambitions within our long-term strategic ambitions and Business Plan, ensuring the Company delivers for everyone it serves.

Finally, it describes how management rewards and changes to the Company's structure and financing are designed to support an efficient, sustainable and effective business, improving transparency, trust and confidence in the Company and the wider industry.

Operating environment

Climate change, population and housing growth and the need to protect and enhance the natural environment are all particularly acute issues in our region, where they combine to pose a unique challenge.

Ours is the driest region in the UK. Water resources are already scarce, and climate change could reduce them further. At the same time we face the threat of more frequent flooding in this low-lying part of the country. We serve three of the five fastest-growing cities in the UK and the region's population could increase by up to a million in the next 25 years.

These challenges have been amplified over the last year when we were faced with severe weather during the 'Beast from the East', followed by the record-breaking and prolonged hot, dry summer. We are also operating in an environment where complex social, political and environmental challenges are increasing.

Our customers and stakeholders rightly expect us to deliver an excellent service whilst also playing a crucial role in tackling these wider social and environmental challenges.

We must continue to address these challenges alongside those common to the industry as a whole, including the need to keep our services affordable and support the vulnerable.

Anglian Water's aspirations

The Board's aim is to ensure the effective delivery of the Company's Love Every Drop strategy, rooted in finding solutions to these challenges whilst providing safe, clean drinking water, protecting our environment and delivering world-class customer service. The strategy has forged an efficient, sustainable, responsible business that has delivered frontier performance on bills, leakage, carbon reduction and demand management.

We recently embarked on a process of updating our 25-year Strategic Direction Statement (SDS), first published in 2007. The process was informed by in-depth discussions with more than 1,300 household customers and nearly 500 non-household customers. Our online community gave us an 'advisory board' made up of engaged customers with whom we could talk in depth about their needs and our plans.

Our revised SDS sets out four long-term ambitions for us and our region:

- Make the East of England resilient to the risks of drought and flooding
- Enable sustainable economic and housing growth
- Be a carbon neutral business by 2050
- Work with others to achieve significant improvement in ecological quality across our catchments.

Since revising the SDS, we have beaten our ambitious carbon targets for 2020 and this year we have led the industry in setting a target to achieve net zero carbon emissions by 2030.

Revising our SDS is just one aspect of an on-going programme of engagement with all stakeholders across the region. This programme informs not only our long-term ambitions, but also our 10 Outcomes and the Performance Commitments (with linked Outcome Delivery Incentives) that we use to measure our progress towards them.

This year, we published our 2019 Water Resources Management Plan (WRMP), which sets out how we will manage water supplies in our region to meet current and future needs over a minimum of 25 years.

We have also updated and published (in draft) our latest Drought Plan, which sets out how we will safeguard public water supplies during extended periods of low rainfall, and what we will do to minimise any potential environmental impacts that may arise as a result.

Alongside our WRMP, we have developed our first Water Recycling Long-Term Plan (WRLTP), endorsed by a wide range of stakeholders, including the Environment Agency and local councils. It outlines the investment needed over the next 25 years to balance the supply and demand for water recycling services and enable the predicted 20 per cent increase in population over the next 25 years.

Our Business Plan for 2020-25 builds on customer engagement that indicates a clear desire for us to take action to increase resilience to these challenges now, rather than to wait.

The Board has been fully engaged in the development and approval of the Business Plan throughout its production and has great confidence in its quality, along with the depth and breadth of customer and stakeholder engagement that has shaped it and the assurance processes underpinning it. We are also confident of the deliverability of the proposals within our Business Plan, recognising that it will nonetheless be very stretching. It proposes a record £6.5 billion investment programme to drive down leakage a further 22 per cent going from industry-leading to world-leading levels; a Water Resources Management Plan totalling £630 million, nearly eight times larger than the last period, which will reduce the risk of water restrictions for all customers; £783 million to support the environment, more than double the last period; £650 million to enable sustainable growth and plans to support more than 475,000 customers each year who need help with affordability or vulnerability issues.

Embedding customer and stakeholder engagement

The Business Plan has been written following the most extensive engagement we have ever had with customers – no fewer than half a million customer interactions, ten times more than for our previous business plan. This engagement has shaped our plan like never before, eschewing traditional consultations for on-going dialogue, ensuring rapid response to changing customer expectations.

Those conversations continue now that our Business Plan and response to Ofwat's Initial Assessment have been published, so we can tap into that pool of knowledge at appropriate points of the regulatory process. We have recently established a Customer Board and together with our Customer Engagement Forum, we have direct access to customer views on an ongoing basis; the outputs of this will be shared and discussed at the Company Board.

Company performance

Anglian Water has delivered a decade of first class performance, most notably in leakage reduction and customer service. Our approach – to innovate, learn and share – has again seen us pushing the frontier for the whole industry, while enabling the continued growth and prosperity of the region.

We have already:

- Reduced leakage by a third since privatisation to reach industry-leading levels, with the water lost per kilometre of pipe at half the national average
- Kept the amount of water we supply every day at 1989 levels, despite supplying an extra 600,000 properties – the equivalent of saving 200 million litres per day

- Cut our capital carbon emissions by 58 per cent on 2010 levels and reduced operational carbon emissions by 29 per cent in comparison to the 2014/15 baseline. This has driven innovation and efficiencies that feed into lower bills
- Increased bills by just 20p for every extra £1 charged by other companies since privatisation. Our bills have fallen around 10 per cent in the last five years – twice the industry average – in part due to efficiencies we have shared with customers.

Alongside planning for the future, we have not lost sight of the importance of delivering our Business Plan for AMP6, 2015-20, based around ten outcomes which cover the issues that matter most to our customers.

As described in detail in our 2019 Annual Integrated Report (AIR), to be published in early July, in the course of the past year we have made tangible progress towards delivering these outcomes.

We were named number one for customer service based on Ofwat's qualitative measures in the Service Incentive Mechanism (SIM) measure for water companies for the year ended 31 March 2019. This builds on almost two decades of consistent upper-quartile service performance and marks our second year as number one.

The Company has also continued pushing leakage performance even further and the regulatory leakage target has been beaten for the eighth year running. Customer contacts regarding drinking water quality are at best ever levels.

This excellent all-round performance has been recognised when the Company was named Utility of the Year at the Utility Week Awards in December 2018. We also achieved two awards at this year's prestigious International Water Association Awards, held in Tokyo, in recognition of our ambitious leakage strategy.

Continually delivering this leading performance relies on the passion and dedication of our people. We work hard to create a culture where our colleagues feel supported and valued, recognised this year by Glassdoor naming us as the best place to work in the UK – a particularly welcome award as it is voted for by the people who know Anglian Water best: Our employees.

The safety and wellbeing of our employees is of paramount importance. This year our approach was recognised again by the Royal Society for the Prevention of Accidents (RoSPA) with a 'Gold' 2018 Health and Safety award. We were also the first UK water company to be awarded the ISO 45001 standard for health and safety.

Last year, the Company was also the first European utility to issue a Sterling Green Bond, and this year we've recently issued our second Green Bond.

More detail on all of our outcomes and progress made to date will be published in our AIR; We also publish our progress on a dedicated performance website.

Overall, we are performing well on most of our performance commitments. In the first four years of the current regulatory period we have earned more than £48 million for exceeding performance commitment levels (PCLs) we committed to in 2015 (net of one small penalty for water infrastructure serviceability). These rewards were spread across eight performance commitments, including leakage, pollutions and supply interruptions.

Performance commitment levels (PCLs) were set for 14 of our performance commitments in 2018/19. We have met 13 of these, with the only shortfall against mean zonal compliance (a measure of the quality of drinking water), where the PCL is 100 per cent.

Reaching beyond regulatory compliance and performance targets

Company performance reaches far beyond regulatory compliance and meeting targets. We are proud to be a purpose-led business rooted in long-term sustainable ambitions, continually examining our impact on the communities we serve.

We have been at the heart of leading this approach across the industry and this year were instrumental in the creation of the water industry's Public Interest Commitment, which saw the entire industry joining forces to set new standards for a social contract with customers and stakeholders with the goal of delivering wider benefits to society, above and beyond the provision of clean, fresh drinking water.

While Anglian Water's year as Business in the Community's (BITC) Responsible Business of the Year came to an end in July, our work as a responsible business grew. We have been working with BITC to develop a new, business-led place-making strategy, building on our experiences in regenerating the Cambridgeshire town of Wisbech and BITC's work across the country. A national Place Leadership team has been established and a strategy has been developed that has encouraged three businesses to commit to driving community regeneration in three new locations.

The relationship between financial performance, executive rewards and delivery of services

The Board is committed to implementing the recommendations included in the 'Back in Balance' paper and in Ofwat's Board Leadership Transparency and Governance ('BLTG') Principles which were published in January 2019. In fact, the Board was keen to adopt more stretching corporate governance requirements and has adopted the Anglian Water Services Corporate Governance Code 2019 which incorporates both Ofwat's BLTG Principles and the majority of provisions of the 2018 UK Corporate Governance Code.

We take our responsibility as a monopoly supplier of water and water recycling in the Anglian Region very seriously, going beyond the required disclosure to demonstrate that our executives are rewarded for delivering outcomes that directly benefit our customers.

A significant proportion of director and senior management reward is based on performance against demanding targets. At the start of each year, the Board sets targets which focus management on driving improvements across the ODIs, customer service, efficiency and ensuring financial returns which maintain investor confidence while being fair to customers.

We have continued increasing our transparency on remuneration, including publishing the ratio of CEO pay to median company pay. The Remuneration Committee has also made sure that all variable reward is aligned to the outcomes that reflect customers' priorities. This means that our executives must deliver extremely stretching outcomes set out in our Business Plan to receive any maximum rewards in our bonus scheme. More details of how the Board is rewarded for achieving targets are set out in the Remuneration Report, contained in the AIR.

Improving Transparency

In March 2018, the Board of Anglian Water, in conjuction with the pension fund-backed shareholders, announced a series of corporate and financial initiatives to improve transparency, trust and customer confidence. These included removing our Cayman Islands Company (the first UK water company to do so) and repaying a £1.6 billion inter-company loan to allow for greater clarity of financial reporting.

Our shareholders have agreed to a substantial reduction in dividends through to 2025, resulting in a significant reduction in the Company's level of debt and gearing. In addition they are committed to equity injections to help reduce gearing, with £22.0 million invested in October 2018 to be followed by further investments to come.

Assurance

This Board Statement forms part of our APR and, as such, falls within the scope of our Independent Auditors' Report.

Our Data Assurance Summary, also included within the APR, describes how we ensure that the information we report is accurate, clear and transparent. It includes the assurance that the Board has received on performance and compliance for 2018/19.

This Board statement was approved by the Board of Directors on 8 July 2019 and signed on its behalf by Claire Russell, Company Secretary.

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Claire Russell

Company Secretary

Dated 8 July 2019

Risk and Compliance Statement

As the Board of Anglian Water Services, we confirm the following:

- We have sufficient understanding of our obligations as set out in the Water Industry Act and our licence ('our Obligations').
- We are satisfied that we have sufficient processes and internal systems of control to meet our Obligations.
- Subject to the exceptions listed below, we believe we are meeting all our material obligations.
- We have taken adequate steps to understand the range of expectations of our diverse customer base. We have sought to provide a service offering that best meets those expectations, taking into account the requirements of other stakeholders, the sustainability of the business and the level of water bills that customers are willing and able to pay.
- We have appropriate systems and processes in place to allow us to identify, manage and mitigate our material risks.

Furthermore, we confirm the following:

- We have sufficient financial and management resources to enable us to carry out our regulated activities and have submitted to Ofwat the certificate to this effect required by section I.17 of our Instrument of Appointment.
- The Company has available to it sufficient rights and assets to enable a special administrator to manage the affairs, business and property of the Company in the event that a special administration order were made, as required by condition K.3 of our Instrument of Appointment.
- All trade between the Company and associate companies in the year has been at arm's length, as required by condition I of our Instrument of Appointment.
- With our Annual Integrated Report for the year we have published a statement linking Directors' pay to standards of performance, as required under section 35A of the Water Industry Act 1991.
- We have maintained for the whole year an issuer credit rating for Anglian Water Services Financing Group of investment grade (Baa1) in accordance with condition I.30 of our Instrument of Appointment.

As set out in the business viability statement on pages 16 to 21 of this Annual Performance Report, the Directors have a reasonable expectation that the Company will be able to continue in operation and meet its liabilities as they fall due over the period set out in that statement.

Exceptions

The section below identifies obligations set out in the Water Industry Act, our Instrument of Appointment and the Regulatory Accounting Guidelines which – with Ofwat's knowledge – we are not complying with.

- The Water Industry Act places an obligation on wastewater companies to maintain maps of their sewers. In common with all other wastewater companies in England and Wales, not all of our sewers are so mapped because the cost of doing so is generally agreed to be uneconomic.
- Condition J of our Instrument of Appointment creates certain obligations regarding the setting, monitoring and reporting of service targets. Because of changes to the regulatory approach we are no longer required to fulfil these obligations.

Certified by

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Claire Russell

Company Secretary

Dated 8 July 2019

Business Viability Statement

Background

The Directors are responsible for ensuring the resilience and viability of its water and wastewater services to meet the needs of its customers in the long-term. This means the Company must be able to avoid, manage and recover from disruptions to its operations and finances.

The Directors' review of the longer-term viability of the Company is an extension of our business planning process, which includes financial forecasting, a robust risk management assessment, regular budget reviews and scenario planning. This activity is strengthened by a culture throughout the Company of review and challenge. Our vision and business strategy aim to make sure that our operations are resilient and our finances are sustainable and robust.

As part of AWS' approach to defining risk appetite, each year the Directors review our specific risk tolerance levels and consider whether our decision-making behaviours over the past year have been consistent with these risk levels. The Directors confirmed that the Company's behaviours over the past year had been in line with our risk appetite.

In April 2019 Ofwat issued Information Notice IN 19/07 setting out its expectations for companies in issuing long term viability statements. Additional detail on the processes and assumptions underpinning our long term viability statement and how we can demonstrate our compliance with IN 19/07 is provided immediately after the Directors' statement in the following pages.

Look forward period

As one of the ten regional water and sewerage services companies operating in England and Wales, Anglian Water's prices are set by the industry regulator Ofwat for five-year Asset Management Plan (AMP) periods, which support the Company's underlying costs. This provides reasonable certainty over future tariffs, revenues, costs and cash flows over the current AMP (April 2015 to March 2020).

In previous years the Directors' assessment covered a five year period. However, in the current year the Directors are aligning the assessment to a rolling 10 year period based on a longer term business plan which takes us from the current AMP (AMP6) through the next two price reviews, AMP7 (2020-2025) and well into AMP8 (2025-2030). This fits with our long term planning horizon and means that we can test financeability beyond the AMP7 price review.

We have developed robust business forecasts which cover this period; these are aligned to our PR19 Business Plan submission which included forecasts for AMP8, which provides the Directors with confidence to extend the look forward period well into AMP8.

The Board considered whether there are specific, foreseeable risk events relating to the principal risks that are likely to materialise within a ten year period, and which might be substantial enough to affect the Company's viability and therefore should be taken into account when setting the assessment period. These were modelled appropriately within our downside scenarios.

The Board also considers the maturity profiles of debt and the availability of new finance over ten years as part of its review of financial modelling and forecasting, as well as considering the credit ratings of the debt.

Key assumptions

The next nine years of the 10 year look forward period are outside the current AMP and therefore subject to the final outcome of the current price review (AMP7, covering April 2020 to March 2025) which is yet to be confirmed, and the following five year price review (AMP8, covering April 2025 to March 2030) for which further uncertainty exists. However

at this stage we have used the very challenging indicative WACC rate that Ofwat have signalled for AMP7 as the basis for our stress testing. We have applied a similar WACC for AMP8. We have also incorporated in our base assumptions the 'gearing benefit sharing mechanism' introduced by Ofwat for AMP7 and beyond. We also note that in an incentive based regulatory regime we have the opportunity to be rewarded for outperforming the regulatory determination. However, given the low indicative WACC rate, we have had to take mitigating action in our planning, resulting in substantial reductions in dividends paid to shareholders in order to achieve financial resilience. Finally, we take note of the Water Industry Act, which requires Ofwat to secure that water companies can (in particular through securing reasonable returns on their capital) finance the proper carrying out of their statutory duties.

In making this statement, the Directors have assumed that funding for capital expenditure in the form of capital markets or bank debt will be available in all reasonable market conditions. They have also considered the impact of the group structure, intra-group transactions and any other group activities on the viability of the regulated business.

Benefits of the securitised structure

The highly covenanted nature of our financing arrangements (often described as a whole business securitisation) enhances our financial resilience by imposing a rigorous governance framework. This requires continuous monitoring and reporting of our financial and operating performance by senior management, through a well-established business process, to ensure compliance with our financing arrangements, and provides an additional layer of control over how we transact with our stakeholders including suppliers, business partners, customers, shareholders and lenders compared to the regulatory frameworks that we are governed by. Over the current AMP we have made progress in reducing our leverage by retaining cash in the business and reducing the level of dividends we pay and we have announced that we expect to see a significant reduction in dividends to our shareholders through to 2025 and beyond. Lower gearing has the advantage of providing greater headroom against covenants and demonstrates stronger credit metrics which provides the appropriate flexibility and greater resilience to deal with unexpected cost shocks should they arise.

Principal risks

We have set out the details of the principal risks facing our Company in our Annual Integrated Report, described in relation to our ability to deliver our 10 Outcomes. We identify our principal risks through a robust assessment that includes a continuous cycle of bottom-up reporting and review, and top-down feedback and horizon scanning. Through this assessment, priorities are elevated appropriately and transparently.

The Directors regularly review business plans that show projected cash flows for the remainder of the current AMP period, and long-term cash flow modelling projections which extend into the next AMP period and beyond. As we approach the end of a five-year AMP period and await the outcome of the next price determination, the business makes assumptions about the forthcoming AMP7 price review. Similar assumptions are made for the following price review in AMP8.

Stress testing the business plan

In stress testing its financial viability, Anglian Water considers its credit rating and the stringent covenant tests required under its securitised structure to provide comfort to our bondholders that our business is viable to the end of the current AMP period and beyond, and to ensure the availability of debt to finance the Company's investment programme. At each Regulatory Price Review and throughout the AMP, the Board satisfies itself that the agreed five-year business plans ensure adequate covenant headroom over the rolling ten year period. This includes extensive downside scenario testing at both Anglian Water and group level from severe, plausible and reasonable scenarios chosen because they have the greatest risk to the business. The following scenarios have been used individually and in combination to model the impact on the overall performance of the business, the ability of the business to service its debt and on its credit rating:

- Financial and operational performance impacts arising from severe but plausible crystallisation of the principal risks set out in our Annual Integrated Report, and the likely effectiveness of available mitigating actions;
- No further totex outperformance in the current AMP and beyond;
- Material totex underperformance (overspends of 10 per cent across an AMP);
- Material ODI penalties (of up to 3 per cent of Return on Regulatory Equity applied in a single year);
- Regulatory fines and legal penalties (up to 3 per cent of turnover applied in a single year). Unfunded pension liabilities and potential cost impacts of Brexit;
- The potential impact of credit rating agencies downgrading the debt for any companies in the group;
- Cost of debt increases (2 per cent above base level assumptions across an AMP);
- Significant inflation fluctuations (both 1 per cent above and below base level assumptions for each AMP).

Stress testing has also included combined scenarios based on material totex and retail cost underperformance, along with ODI penalties all occurring in each year of the five year look forward period. Other combined scenarios include significant cumulative cost underperformance, coupled with material reductions to revenue associated with lower inflationary scenarios.

Mitigating actions

For each sensitivity and combined scenarios, where needed, we identify the appropriate mitigations against the potential risks. In the event that the situations used for stress testing were to result in an unacceptable level of deterioration in the Company's financial metrics, management's principal actions would include further reducing the level of shareholder distributions, potential shareholder equity injections, reviewing the financing structure and identifying further opportunities to reduce the Company's cost base or reduce financing costs. The Board regularly reviews current and forward forecasts for financial and operating performance and would use this to determine appropriate action to avoid the cumulative impact of repetitive cost risks tested in the downside scenarios. Evidence of the shareholders' support for equity injections is provided by the equity injections made in the current year of £22.0 million, and the fact that our AMP7 five year business plan includes further equity injections in order to reduce our gearing.

As a further mitigation we have a significant portfolio of insurance cover in place to provide protection against many catastrophic scenarios such as dam failure, pluvial and fluvial flood, terrorism, and public and employer's liability.

There would still be a short term liquidity impact from such events due to the time it would take between incurring the expenditure and recovering this through the insurance claim, however it is an important consideration in terms of medium term liquidity.

The Board formally reviews the output of the stress testing twice a year.

Assurance

Robust internal assurance is provided by the Board reviewing and challenging the stress test scenarios selected and the risk mitigation strategies. The directors also obtain annual independent third party assurance on the integrity of the long-term cash flow model which underpins the financial projections. In addition, this statement is subject to review by Deloitte, our external auditor. Their report is set out on pages 210 to 213.

Directors' statement

The Directors submitted the Company's business plan for the next AMP to Ofwat in September 2018. Following Ofwat's publication of its initial assessment of this plan in January 2019 ("the IAP"), the Company provided a response to Ofwat, addressing all the actions raised in the IAP. Ofwat will issue its Draft Determination of Plan in July 2019, and a Final Determination in December 2019. This will form the basis for setting customer charges over the following five years. The submitted plan shows that the expectation of a reduced cost of capital set by Ofwat will be a significant challenge to our financeability in the next AMP.

However, we are an efficient company with a history of outperformance and we would expect to agree a business plan with the Regulator that is financeable and meets both the respective obligations and responsibilities of the company and the Regulator. Subject to the final outcome of the new periodic review for AMP7 being materially aligned with our base plan and our plans which takes us through to the end of AMP8, the directors can be satisfied that the business has a reasonable expectation of being able to continue in operation and meet its liabilities as they fall due at least to March 2029, and is financially resilient. This is based on the reasonable certainty of its future revenue stream, the strength of the balance sheet (in particular the substantial cash balance and strong net assets), the availability of undrawn debt facilities in the unlikely event that debt markets were temporarily restricted, and by reviewing the business plans and strategic models, combined with the robust risk management process and mitigations described above.

Supplementary information to the above viability statement in support of meeting the requirements of Ofwat Information Notice IN 19/07 "Expectations for companies in issuing long term viability statements"

Looking forward beyond 2025 and 'Initial Assessment of Plan' actions

The directors have assessed Anglian Water's financial viability over the next ten years from April 2019 to March 2029, as detailed in our viability statement; this is also in line with our commitment provided to Ofwat in our Initial Assessment of Plan (IAP) submission to demonstrate financial resilience beyond 2025.

Plans reflect an accurate up to date view and take account of anticipated changes in financing and gearing

Our future operational and expenditure plans which have been stress tested in support of our long term viability statement (LTVS), fully reflect our PR19 post IAP business plan submission. This plan includes the anticipated degearing in AMP7 with a continuation of degearing into AMP8. The regulatory regime incentivises good operational performance and customer service though the use of financial and reputational rewards. We are a leading company, which has consistently delivered totex outperformance, achieved net ODI rewards across both Water and Water Recycling price controls and are leading in the SIM customer service measure. As a leading company we would therefore expect to continue to deliver some net outperformance against price review determinations. Our base unmitigated position, to which we apply stresses and shocks, assumes no future outperformance or financial rewards; in itself we view this as a very prudent position.

Justification for scenarios selected

As part of our stress testing we have modelled appropriate scenarios and sensitivities which reflect the risks that the business faces. We have listed the scenarios tested (both individual and in combination) in our viability statement, including where appropriate, the severity of the stress testing. Our stresses and cost shocks that we have applied and tested are substantially more extreme than any actual risk that has crystallised in AWS since privatisation, some 30 years ago. Macroeconomic impacts have been set with consideration of recent economic trends. We have also considered the size of historic cost shocks experienced by the wider industry since privatisation.

Consideration of full range of categories of risk and link to wider risk assessment reported in statutory accounts

Our stress testing aligns to the principal risks identified in our Annual Integrated Report. These risks consider individual company risks, as well as common external risks that affect the sector as a whole, including severe, but plausible macroeconomic impacts. Available mitigations against downside shocks, where necessary are detailed in our long term viability statement.

Our approach to risk management is detailed in our Annual Integrated Report (AIR). In our AIR we describe in detail our processes for identifying, assessing and mitigating risks. We have considered the full range of categories of risk which could impact the company; these include financial risks, operational risks and regulatory risks.

Methodology used and justification

We maintain a comprehensive long term cashflow model against which we test the impact of downside scenarios. This model is subject to annual independent third party assurance to ensure its integrity, which underpins the financial projections and outputs. As well as future cashflows, this model includes metrics testing our forecast compliance against our lending covenants and key Rating Agency metrics (for example PMICR and FFO/net debt). The robustness of this cashflow model, together with the internal and external assurance applied to the outputs of the stress testing, provide reassurance to the Board, that our approach to viability testing is appropriate.

Workforce considerations

As part of our risk management framework we actively consider the need to continue to attract and retain a workforce with the talent and skills to ensure our long term success. This is enhanced by our leading status in both operational and customer service measures and demonstrated in the recognition by Glassdoor as the best place to work in the UK.

Pension risk

With regard to pension risk, our defined benefit pension schemes are closed to future accrual of benefits, and therefore the only remaining risk relates to pension deficit recovery payments. As part of our stress testing we have included the impact of downside risks which would trigger additional pension deficit payments and have modelled these impacts as part of our stress testing.

Revenue variation risk

Our stress testing also included plausible, but severe reduction in revenue, through testing of large ODI revenue penalties and increases in bad debt.

Credit rating risk assessment and mitigations

Our downside stress tests include the impact on key Ratings Agencies metrics and where metrics come under pressure, appropriate mitigations have been identified. These mitigations have been quantified and tested for ability to implement in the necessary timeframe and are sufficient to avoid the risk of downgrade to sub-investment grade in all scenarios.

Our LTVS considers the need to raise further funding for investment and we have assessed the impact on key Ratings Agencies metrics in all of our downside scenarios. We have committed to degear during AMP7 through a significant reduction in dividends to shareholders; this will increases our equity buffer above current levels. In addition our shareholders have demonstrated their long term commitment and support of the business as evidenced by their past actions which have included injecting additional capital into the business, reducing gearing through dividend reduction and re-investing operational outperformance and efficiencies for the benefit of customers. As part of the response to Ofwat's initial assessment of our business plan, our shareholders submitted a letter of

comfort to Ofwat dated 27 March 2019, detailing their support for our business plan, their long term commitment and support of the business and their commitment to financial resilience.

Company Monitoring Framework assessment assurance and actions

We have considered the assurance requirements arising from latest company monitoring framework, and have provided additional clarification on the external assurance activities undertaken in support of our long term viability statement. We have also considered the impact of the downside stress tests on the key metrics used by the Ratings Agencies. In all but the most extreme implausible scenarios we maintain an investment grade credit rating, with the expectation that Rating Agencies in such a scenario, see through short term transitory impacts such as a single year cost shock.

Impact on financing plans

We have tested the impact of a credit rating downgrade through increasing the cost of raising new debt, and our mitigations are sufficient to maintain our business viability. Our Board policy of maintaining at least 18 months of liquidity, together with a policy of refinancing maturing debt at least three months in advance of maturity ensures significant protection against downside shocks and credit market availability. We have significant committed liquidity facilities of just under £1 billion and plan to maintain this throughout AMP7. This protects us from any short term restrictions in the availability of credit markets and provides substantial liquidity to meet severe but plausible short term cash flow impacts.

Reflecting impact of gearing benefit sharing mechanism

Our long term plan and the stress testing undertaken includes the impact of the gearing benefit sharing mechanism when gearing exceeds 70 per cent. For the purposes of stress testing, the benefit is assumed to be passed back to customers in the subsequent AMP in the form of lower bills, spread evenly across the AMP on an NPV neutral basis. We currently have no regulatory investigations being undertaken, therefore we have not had to take these into account for our viability statement.

PR19 scenarios

As well as our internally developed scenarios, we have for completeness undertaken stress tests using the PR19 prescribed scenarios. We do not however view all of these as plausible; scenarios involving 10 per cent shocks to totex that are sustained throughout AMP7 are considered for completeness but are regarded as implausible given the understanding that management has over the way the cost base is likely to evolve. A sustained 10 per cent shock to totex every year would threaten the current corporate credit rating, whilst the extreme PR19 specified combined scenario (without any mitigating action) could threaten the investment grade credit rating. We view these scenarios as extreme and implausible given our past performance, actual historic risks that have been experienced since privatisation, and ability to mitigate sustained year on year underperformance.

Statement of Directors' Responsibilities

Further to the requirements of company law, the directors are required to prepare accounting statements which comply with the requirements of Condition F of the Instrument of Appointment of the Company as a water and sewerage undertaker under the Water Industry Act 1991 and Regulatory Accounting Guidelines issued by Ofwat.

This additionally requires the directors to:

a. Confirm that, in their opinion, the Company has sufficient financial resources and facilities, management resources and methods of planning and internal control for the next 12 months.

The directors have submitted to Ofwat a certificate which confirms the adequacy of resources and facilities as set out above and in accordance with section I.17 of the Instrument of Appointment.

b. Confirm that, in their opinion, the Company has sufficient rights and assets which would enable a special administrator to manage the affairs, business and property of the Company.

The directors confirm this requirement has been met throughout the year - see note confirming compliance with Condition K3.1 of the Instrument of Appointment.

c. Confirm that, in their opinion, the Company has contracts with any associate company with the necessary provisions and requirements concerning the standard of service to be supplied to ensure compliance with the Company's obligations as a water and sewerage undertaker.

The directors have submitted to Ofwat a certificate which confirms the adequacy of resources and facilities as set out above and in accordance with section I.17 of the Instrument of Appointment.

d. Report to Ofwat changes in the Company's activities which may be material in relation to the Company's ability to finance its regulated activities.

The directors hereby confirm there no such changes in the year ended 31 March 2019.

e. Undertake transactions entered into by the appointed business, with or for the benefit of associated companies or other businesses or activities of the appointed business, at arm's length.

This has been confirmed within note 7 'Information in respect of transactions with any other business or activity of the appointee or any associated company'.

f. Keep proper accounting records which comply with Condition F.

The directors of the company hereby confirm that the company has kept proper accounting records, which comply with Condition F.

g. Undertake that the Company's procurement of services activities was in compliance with paragraph 3.1 of Condition F1 of the Licence throughout the year.

The directors hereby confirm compliance with this requirement throughout the year.

These responsibilities are additional to those already set out in the statutory financial statements.

In the case of each of the persons who are directors at the time when the Report is approved under Section 418 of the Companies Act 2006 the following applies:

a. So far as the director is aware, there is no relevant audit information of which the Company's auditors are unaware; and
b. He/she has taken all the steps that he/she ought to have taken as a director in order to make himself/herself aware of any relevant audit information and to establish that the Company's auditors are aware of that information.

Ofwat Disclosures

The table below sets out the Ofwat disclosure requirements (principally from RAG 3.11) and where they may be found in this and other published reports.

Disclosure	Where can I find this?
AWS statutory and accounts, ultimate UK holding company accounts	On the AWS company website https://www.anglianwater.co.uk/about-us/ and the group website:https://www.awg.com/reports/
Accounting Separation Methodology Statement	On the AWS company website: https://www.anglianwater.co.uk/about-us/our-reports/
Audit Reports on the APR	Deloitte audit report on pages 210 to 213 Halcrow assurance report on pages 214 to 216
Disclosures required in the Annual Performance Report	
Statement on directors' pay	Page 192 and the Remuneration Report in the Annual Integrated Report Annual Integrated Report
Statement on disclosure of information to auditors	Statement of directors' responsibilities on page 22
Dividend policy	Notes to the Annual Performance Report, note (7), (d), page 193
Accounting policy note for price control units	Notes to the Annual Performance Report, note (4), page 192
Revenue recognition note, and measured income accrual	Includes the requirement to comment on the measured income accrual, notes 2(a) and 6, pages 190 and 192
Capitalisation policy note	Notes to the Annual Performance Report, note (2), (c), page 192
Bad debt policy note	Notes to the Annual Performance Report, note (2), (b) page 191
Sufficiency of non-financial resources (compliance with condition K)	Notes to the Annual Performance Report, note (7), (i) page 196
Certificate of adequacy / Sufficiency of financial resources & facilities	Risk and compliance statement, page 14 Separate certificate submitted to Ofwat
Tax strategy for the appointed business	On the company website https://www.anglianwater.co.uk/about-us/who-we-are/governance/
Differences between statutory and RAG definitions	Included in section 1 tables, pages 26 to 56
Long Term Viability Statement	Pages 16 to 21
RORE Statement	Table 4H, page 119
Narrative disclosures on performance	
Outcomes - explain how information in 3A relates to information it as published and reported to customer challenge group, and (if applicable) explain why it thinks forecasting rewards is inappropriate	Table 3A page 74 to 91
Totex - explain differences between actual and allowed totex in 4B, including references to efficiency savings, timing, outputs not delivered and exceptional / atypical costs	Table 4B page 105 to 106

Disclosure	Where can I find this?
Retail - explain differences explained between actual and allowed totex in 2C, including references to efficiency savings, customer numbers, changes in metering levels and exceptional / atypical costs	Table 2C page 61 to 62
Wholesale revenue control reconciliation - Explain differences explained between actual and allowed revenue in 2I, including references to customer numbers, customer demand, changes in metering levels, new connections and voids	Table 2I page 70 to 71
Current tax reconciliation - reconcile the appointed tax charge / credit to the that resulting from applying the standard corporate tax rate to the appointed P&L, and to the tax charge allowed in price limits	Notes to the Annual Performance Report, note (8), page 197
Financial Flows	Table 1F, pages 42 to 55
New Connections	Table 2K, pages 73
Transactions to be disclosed	
Transactions between the appointee and associate businesses - including loans, dividends, guarantees, transfer of assets, transfer of corporate tax losses and supply of services	Notes to the Annual Performance Report, note (3), page 192, and note (7), page 193
Others	
Data Assurance Summary	Pages 199 to 209
Board Statement of Company Direction and Performance	Pages 9 to 13
Risk and Compliance Statement	Pages 14 to 15
Ofwat Principles on Board leadership, Governance and Transparency, published April 2019. Reporting should include: Group structure, dividend policy and payments, risk management, board and committee membership and executive pay	Covered in the Board Statement of Company Direction and Performance on pages 9 to 13, and the Annual Integrated Report (https://www.anglianwater.co.uk/siteassets/household/about-us/aws-air2019.pdf)

Table 1A - Income Statement

For the year ended 31 March 2019

	Line description	Statutory	Adjustments			Total appointed activities
			Differences between statutory and RAG definitions	Non - appointed	Total adjustments	
		£m	£m	£m	£m	£m
1	Revenue	1,354.658	(73.685)	21.049	(94.734)	**1,259.924**
2	Operating costs	(979.250)	22.988	(13.069)	36.057	**(943.193)**
3	Other operating income	13.604	(12.396)	-	(12.396)	**1.208**
4	**Operating profit**	389.012	(63.093)	7.980	(71.073)	**317.939**
5	Other income	-	75.359	-	75.359	**75.359**
6	Interest income	2.819	-	-	-	**2.819**
7	Interest expense	(331.824)	(22.118)	-	(22.118)	**(353.942)**
8	Other interest expense	-	0.439	-	0.439	**0.439**
9	**Profit before tax and fair value movements**	60.007	(9.413)	7.980	(17.393)	**42.614**
10	Fair value gains/(losses) on financial instruments	(98.407)	-	-	-	**(98.407)**
11	**Profit before tax**	(38.400)	(9.413)	7.980	(17.393)	**(55.793)**
12	UK Corporation tax	(55.900)	-	(1.516)	1.516	**(54.384)**
13	Deferred tax	61.000	1.600	-	1.600	**62.600**
14	**Profit for the year**	(33.300)	(7.813)	6.464	(14.277)	**(47.577)**
15	Dividends	(68.000)	-	(6.464)	6.464	**(61.536)**

A Tax Analysis

16	Current year	53.900	-	1.516	(1.516)	**52.384**
17	Adjustments in respect of prior years	2.000	-	-	-	**2.000**
18	**UK Corporation tax**	55.900	-	1.516	(1.516)	**54.384**

B	Analysis of non-appointed revenue	Non-appointed
19	Imported Sludge	0.116
20	Tankered waste	2.856
21	Other non-appointed revenue	18.077
22	**Revenue**	**21.049**

1 The figures in the statutory columns in tables 1A to 1D are based on the company only accounts of Anglian Water. The principal differences between the statutory accounts and the APR are in respect of capitalised interest and the classification of grants and contributions income. For regulatory reporting capitalised interest is not permitted and therefore the adjustments are to reverse out the impact on depreciation, interest and deferred tax. Grants and contributions income in the statutory accounts is classified as revenue (in accordance with IFRS 15 'Revenue from Contracts with Customers'), whereas in the regulatory accounts it is classified as 'other income'. The other adjustments are reclassifications of the following items:

- Profit on disposals of fixed assets is treated as operating costs in the statutory accounts and other operating income in the APR.
- Rents received are classified as other operating income in the statutory accounts, and other income in the regulatory accounts.
- Contributions received for rechargeable works and fluoridation are other operating income in the statutory accounts, but classified as revenue in the regulatory accounts.
- Certain income treated as negative expenditure in the regulatory accounts (table 2B) is classified as operating income in the statutory accounts in accordance with IFRS 15.
- Interest charges in respect of defined benefit pension schemes are classified as interest expense in statutory accounts and other interest expense in the APR.

2 These adjustments explaining the difference between statutory and RAG definitions are summarised in the following table.

Difference between statutory and RAG definitions

Line description	Adjustments					Total adjustments £m
	Reclassific - ation of profit on disposal of assets £m	Capitalisation of interest and related depreciation £m	Grants and contributions income £m	Reclassific - ation of other operating income £m	Reclassific - ation of pension scheme interest £m	
Revenue	-	-	(74.351)	0.666	-	**(73.685)**
Operating costs	(1.205)	12.263	-	11.930	-	**22.988**
Other operating income	1.205	0.003	-	(13.604)	-	**(12.396)**
Other income	-	-	74.351	1.008	-	**75.359**
Interest expense	-	(21.679)	-	-	(0.439)	**(22.118)**
Other interest expense	-	-	-	-	0.439	**0.439**
Deferred tax	-	1.600	-	-	-	**1.600**
Total	**-**	**(7.813)**	**-**	**-**	**-**	**(7.813)**

3 The following commentary is in relation to the appointed business only. It is noted that IFRS 15 'Revenue from Contracts with Customers' came into effect on 1 April 2018. The principal impact of this new standard is that grants and contributions income is now

recognised at a point in time, rather than being deferred over the life of the related assets, and also certain expenditure recognised as negative expenditure in the regulatory accounts is now classified as other operating income in the statutory accounts.

Revenue (1A.1)

4 Total revenue for the year was £1,259.9 million, an increase of £31.6 million (2.6 per cent) on last year. This primarily reflects the regulatory pricing mechanism, increases in household consumption due to the hot, dry summer and growth in customer numbers. The increase in demand experienced over the summer months was, as expected, not sustained for the remainder of the year.

Operating costs (including depreciation) (1A.2)

5 Operating costs of £943.2 million comprise opex of £607.8 million and depreciation of £335.4 million. Overall operating costs (including depreciation) for the year increased by £47.4 million (5.3 per cent) from £895.8 million in 2018. The key movements in operating costs are highlighted in the following table.

Summary of changes in operating expenditure

Category	£m
One-off net costs in 2017/18 not repeating	(3.5)
General inflationary increases	14.0
Increase in energy prices and costs	10.4
Increase in minor repair activities to maintain water and waste water below ground infrastructure	10.0
Providing more effective solutions through operational maintenance, rather than capital investment	9.0
Dealing with the 'Beast from the East' and the exceptional hot, dry summer – proactive leakage management and avoiding interruptions to customer supply	6.5
Operating costs of newly commissioned plant	4.8
Reduction in actuarial pension charge	(1.1)
Reduction in bad debt charge	(1.5)
Net efficiency savings achieved	(13.0)
Increase in depreciation	11.8
Net increase in operating costs	**47.4**

6 Pension costs were reduced by £4.4 million by closing the defined benefit scheme in March 2018. However, this was partially offset by a £3.3 million provision recognised in respect of AWS' obligation under the principle of guaranteed minimum pension (GMP) equalisation between male and female employees.

7 The cost and efficiency savings are derived from a range of initiatives including energy conservation and self-generation, optimising the sourcing of commodities, centralised management of operations, renegotiating supplier contracts on improved terms, a number of productivity improvements from embedding more lean thinking and processes into the business, and more efficient asset maintenance programmes.

8 Depreciation is up 3.6 per cent compared with last year, consistent with the impact of newly commissioned assets in the year, and a reduction in the useful life of various operational assets.

Other operating income (1A.3)

9 This line comprises primarily profits on fixed asset disposals. Fewer disposals were made in 2018/19, hence the reduction compared with the prior year.

Operating profit (1A.4)

Operating profit for the year was £317.9 million, a fall of 5.5 per cent compared with the previous year. This reflects the increase in operating costs and depreciation, partially offset by the increased revenue, as discussed above.

Other income (1A.5)

10 Other income has increased from £20.8 million in the previous year (as per the published APR) to £75.4 million in 2018/19. This increase primarily reflects the impact of IFRS 15 'Revenue from Contracts with Customers' which came into effect on 1 April 2018. Under this accounting standard the directors have concluded that recognising grants and contributions income at a point in time once a new property has been connected is the appropriate treatment, whereas under the previous standard this income was recognised over the life of the related fixed assets.

Interest income (1A.6)

11 In the previous year this line included interest receivable of £191.8 million on an inter-company loan to Anglian Water Services Holdings Limited. The inter-company loan was settled in March 2018 as part of a group structure simplification and therefore there is no equivalent interest income this year. This leaves interest income for the year on bank deposits of £2.8 million, compared with £1.5 million for the prior year - the increase is due to higher interest rates and an increase in the average deposits held in the year.

Interest expense (1A.7)

12 Interest expense has decreased from £359.0 million in 2018 to £353.9 million in 2019. This was primarily the result of the non-cash impact of lower inflation on index-linked debt where the year on year average Retail Price Index (RPI) fell from 3.7 per cent to 3.1 per cent.

Other interest expense (1A.8)

13 Other interest expense is made up of the actuarial pension charge or credit on the defined benefit pension scheme, which is partly driven by the level of the pension scheme accounting deficit or surplus at the start of the year. There was a credit for the year of £0.4 million, compared with a charge of £1.8 million in the previous year. This is consistent with there having been a significant accounting surplus on the funded defined benefit scheme at the start of the current year, whereas there had been a much smaller surplus at the start of the preceding year.

Profit before tax and fair value movements (1A.9)

14 The profit before tax and fair value movements has declined from £189.8 million in the previous year to £42.6 million in 2018/19. This fall is consistent with the reduced operating profit referred to above and the cessation of interest receivable on the inter-company loan to Anglian Water Services Holdings Limited which was settled in March 2018, partially offset by the increase in 'other income' due to the immediate recognition of grants and contribution income.

Fair value gains and (losses) on financial instruments (1A.10)

15 There was a fair value loss of £98.4 million on derivative financial instruments in 2018/19, compared with a gain of £117.6 million in 2017/18. The driving factors for the loss in 2018/19 compared to the gain in 2017/18 were a rise in forward inflation expectations together with a fall in forward interest rates. During the year, forward inflation increased by circa 12 basis points (2018: 13 basis point fall) and forward interest rates decreased by 16 basis points (2018: 19 basis point increase). Fair value gains and losses include a charge of £11.7 million relating to the restructuring of derivatives that were cash settled in the period. The balance of the fair value gains and losses are non-cash in nature and have no material effect on the underlying commercial operations of the business.

(Loss)/profit before tax (1A.11)

16 The loss before tax for the year was £55.8 million, compared with a profit of £307.4 million in the previous year. This reflects the fall in profit before tax and fair value movements referred to above, and the fair value losses on derivatives in the year which in the previous year had been a significant gain.

Current tax and deferred tax (1A.12 / 1A.13)

17 The current tax charge for the year was £54.4 million (2018: £42.4 million). The increase was mainly due to a charge that arises on adoption of IFRS15 and an increase in profits before taking account of fair value adjustments on derivative financial instruments, which have no current tax effect. This is offset by the claiming of capital allowances.

18 The deferred tax credit has increased from £17.0 million in 2017/18 to £62.6 million. The main reason for this increase was the movement in fair value on financial derivatives, which changed from a gain of £117.6 million last year to a loss of £98.4 million this year. There was also an increase in the credit in respect of prior years and the credit due to the reduction in corporation tax rates.

(Loss) / profit for the year (1A.14)

19 The loss for the year was £47.6 million, compared with a profit of £282.0 million for the previous year. This reduction in profits is consistent with the lower profit before tax described above with the cessation of inter-company interest income and the substantial fair value losses on derivatives being the main drivers, partially offset by the increased deferred tax credit in the year.

Dividends (1A.15)

20 Dividends of the appointed business paid that are available to the ultimate investors in the year were £61.5 million (2018: £79.3 million). The reduction in dividend is principally due to the Directors' decision to de-gear to 80 per cent or less by 2020 and further reduce gearing through to 2025.

21 In the previous year dividends that were not available to the ultimate investors amounted to £1,856.6 million - there were no equivalent dividends in 2018/19.

Table 1B - Statement of Comprehensive Income

	Line description	Statutory	Adjustments			Total appointed activities
			Differences between statutory and RAG definitions	Non - appointed	Total adjustments	
		£m	£m	£m	£m	£m
1	Profit for the year	(33.300)	(7.813)	6.464	(14.277)	**(47.577)**
2	Actuarial gains/(losses) on post employment plans	(15.700)	-	-	-	**(15.700)**
3	Other comprehensive income	33.400	-	-	-	**33.400**
4	**Total Comprehensive income for the year**	(15.600)	(7.813)	6.464	(14.277)	**(29.877)**

1 The principal difference between the statutory accounts and the APR for this table is in respect of capitalised interest. For regulatory reporting, capitalised interest is not permitted and therefore the adjustments are to reverse out the impact on profit for the year.

2 Appointed comprehensive expense for the year of £29.9 million, comprising loss for the year of £47.6 million, actuarial losses on post employment benefits of £15.7 million and other comprehensive income which are gains on cash flow hedges of £33.4 million.

3 Other than the changes to the profit for the year as detailed in the commentary for table 1A, there are no differences between the statutory and regulatory accounts on the statement of other comprehensive income.

Actuarial gains/(losses) on post employment plans (1B.2)

4 Actuarial losses on retirement benefit obligations for the year were £15.7 million (2018: gains of £64.1 million), comprising actuarial losses of £18.8 million partially offset by deferred tax on these gains of £3.1 million. This resulted in Anglian Water Services Limited reporting a net retirement benefit asset of £3.5 million as at 31 March 2019 (2018: £9.1 million).

Other comprehensive income (1B.3)

5 Other comprehensive income for the year comprises gains on cash flow hedges of £39.9 million (2018: £18.3 million), partially offset by deferred tax on these gains of £6.5 million (2018: £3.1 million).

Table 1C - Statement of Financial Position

	Line description	Statutory	Adjustments			Total appointed activities
			Differences between statutory and RAG definitions	Non - appointed	Total adjustments	
		£m	£m	£m	£m	£m
A	**Non-current assets**					
1	Fixed assets	9,770.191	(338.496)	10.857	(349.353)	**9,420.838**
2	Intangible assets	197.289	(8.570)	0.554	(9.124)	**188.165**
3	Investments - loans to group companies	-	-	-	-	**-**
4	Investments - other	0.013	-	-	-	**0.013**
5	Financial instruments	195.592	-	-	-	**195.592**
6	Retirement benefit assets	49.259	-	-	-	**49.259**
7	**Total non-current assets**	10,212.344	(347.066)	11.411	(358.477)	**9,853.867**
B	**Current assets**					
8	Inventories	11.630	-	-	-	**11.630**
9	Trade & other receivables	485.650	-	-	-	**485.650**
10	Financial instruments	20.310	-	-	-	**20.310**
11	Cash & cash equivalents	552.511	-	1.516	(1.516)	**550.995**
12	**Total current assets**	1,070.101	-	1.516	(1.516)	**1,068.585**
C	**Current liabilities**					
13	Trade & other payables	(450.807)	(82.736)	(11.411)	(71.325)	**(522.132)**
14	Capex creditor	(87.873)	-	-	-	**(87.873)**
15	Borrowings	(314.984)	82.736	-	82.736	**(232.248)**
16	Financial instruments	(16.030)	-	-	-	**(16.030)**
17	Current tax liabilities	(253.001)	-	(1.516)	1.516	**(251.485)**
18	Provisions	(4.172)	-	-	-	**(4.172)**
19	**Total current liabilities**	(1,126.867)	-	(12.927)	12.927	**(1,113.940)**
20	**Net current assets / (liabilities)**	(56.766)	-	(11.411)	11.411	**(45.355)**

D Non-Current liabilities

21	Trade & other payables	-	-	-	-	**-**
22	Borrowings	(6,619.592)	-	-	-	**(6,619.592)**
23	Financial instruments	(980.369)	-	-	-	**(980.369)**
24	Retirement benefit obligations	(45.800)	-	-	-	**(45.800)**
25	Provisions	(8.022)	-	-	-	**(8.022)**
26	Deferred income - G&C's	-	-	-	-	**-**
27	Deferred income - adopted assets	-	-	-	-	**-**
28	Preference share capital	-	-	-	-	**-**
29	Deferred tax	(936.758)	59.001	-	59.001	**(877.757)**
30	**Total non-current liabilities**	(8,590.541)	59.001	-	59.001	**(8,531.540)**

31	**Net assets**	1,565.037	(288.065)	-	(288.065)	**1,276.972**

E Equity

32	Called up share capital	32.000	-	-	-	**32.000**
33	Retained earnings & other reserves	1,533.037	(288.065)	-	(288.065)	**1,244.972**
34	**Total Equity**	1,565.037	(288.065)	-	(288.065)	**1,276.972**

1 The statement of financial position is based on the statutory Company only balance sheet with adjustments for interest capitalised and associated deferred tax, and reclassifications of trade and other payables as detailed below.

2 The principal difference between the statutory accounts and APR is in respect of capitalised interest. For regulatory reporting, capitalised interest is not permitted and therefore the adjustments are to reverse out the impact on accumulated depreciation, deferred tax and reserves. The only other adjustments are the reclassification of current grants and contributions and accrued interest to trade and other payables and of capital creditors.

3 These adjustments are summarised in the table below.

Line description	Adjustments			Total adjustments £m
	Reversal of capitalised interest cost £m	Reclassifi - cation of interest accrual on debt £m	Deferred tax impact of reversal of capitalised interest cost £m	
Fixed assets	(338.496)	-	-	(338.496)
Intangible assets	(8.570)	-	-	(8.570)
Trade & other payables	-	(82.736)	-	(82.736)
Capex creditor	-	-	-	-
Borrowings	-	82.736	-	82.736
Provisions	-	-	-	-
Deferred tax	-	-	59.001	59.001
Retained earnings & other reserves	347.066	-	(59.001)	288.065

4 The following commentary is in relation to the appointed business only.

Fixed assets (1C.1)

5 The net book value (NBV) for tangible fixed assets has increased by £111.0 million due to capital expenditure in the year, partially offset by the depreciation charge.

Intangible assets (1C.2)

6 The NBV of intangible assets increased by £27.2 million over the year, reflecting expenditure on IT systems, partially offset by the amortisation charge for the year.

Investments - loans to group companies (1C.3)

7 On 29 March 2018, following our commitment to simplify our corporate structure, a repayment of a loan from the Company to its intermediary parent company of £1,602.6 million was made, therefore this balance is nil in the current and previous years.

Retirement benefit surpluses/obligations (1C.6 and 1C.24)

8 Net retirement benefit assets were £3.5 million comprising a surplus of £49.3 million on the combined Anglian Water Services and Hartlepool schemes, and a £45.8 million obligation on an unfunded scheme. The defined benefit scheme was closed to future accruals on 31 March 2018 and has been replaced with a defined contribution scheme available to all employees.

Current assets (1C.8-1C.12)

9 Total current assets have increased by £247.7 million (30.1 per cent) in the year. This is primarily due to an increase in cash and cash equivalents of £267.2 million.

Trade and other payables (1C.13)

10 Compared with the prior year, trade payables have increased by £14.9 million (2.9 per cent) to £523.4 million. This is consistent with the increase in operating costs.

Capex creditor (1C.14)

11 Capital creditors have decreased by 24 per cent to £87.9 million at 31 March 2019. The prior year included an uplift in the final quarter which was not replicated in the current year.

Borrowings (1C.15 and 1C.22)

12 Total borrowings have increased by £477.4 million in the year. This primarily reflects new term loans of £450.1 million less loan repayments of £140.0 million, increase due to indexation (£97.7 million), exchange rate adjustments (£64.4 million) and debt valuation movements (£48.2 million). A full reconciliation can be found in the analysis of net debt in our statutory accounts.

Current tax liabilities (1C.17)

13 Current tax liabilities have reduced by £11.2 million in the year. The liability solely reflects amounts owed to other group companies where the regulated company, Anglian Water Services Limited, has increased its taxable profits by disclaiming capital allowances only for the benefit of these other companies. There is agreement that the regulated company will pay the tax liabilities arising from the increased taxable profits when it receives the benefit of the disclaimed capital allowances. No amounts are owed to the tax authorities.

Deferred income - adopted assets (1C.27)

14 Following the adoption of IFRS 15 'Revenue from Contracts with Customers' the Company is recognising income from adopted assets at a point in time as opposed to deferring these amounts as in the prior year. Therefore the balance on this line for the current year is nil.

Deferred tax (1C.29)

15 The deferred tax credit is £59.0 million lower than the statutory accounts due to the reversal of capitalised interest on fixed and intangible assets, lines 1 and 2. Compared with last year the balance is £72.1 million higher which is primarily due to the additional deferred tax on the adoption of IFRS 15 'Revenue from Contracts with Customers'.

Called up share capital (1C.32)

16 Following approval from our lenders in October 2018, the AWG Group made an equity injection into the regulated company of £22 million. This was the first of what is expected to be a series of equity injections to be made by AWG over the period to 2025 to help reduce AWS' gearing.

Retained earnings (1C.33)

17 The difference of £288.1 million between the statutory and regulatory accounts is the reversal of capitalised interest less the related movement in deferred tax as a result of this. In addition to the loss for the year, the movement in the balance includes of an adjustment of £457.2 million in respect of IFRS 15, where the deferred grants and contributions income was released to reserves on transition to the new standard.

Table 1D - Statement of Cash Flows

	Line description	Statutory	Adjustments			Total appointed activities
			Differences between statutory and RAG definitions	Non - appointed	Total adjustments	
			£m	£m	£m	£m
A	**Statement of cashflows**					
1	Operating profit	389.012	(63.093)	7.980	(71.073)	**317.939**
2	Other income	(21.994)	75.359	-	75.359	**53.365**
3	Depreciation	348.778	(12.263)	1.156	(13.419)	**335.359**
4	Amortisation - G&C's	-	-	-	-	**-**
5	Changes in working capital	1.460	-	(1.156)	1.156	**2.616**
6	Pension contributions	(12.686)	(3.328)	-	(3.328)	**(16.014)**
7	Movement in provisions	(2.651)	3.328	-	3.328	**0.677**
8	Profit on sale of fixed assets	(1.205)	(0.003)	-	(0.003)	**(1.208)**
9	**Cash generated from operations**	700.714	(0.000)	7.980	(7.980)	**692.734**
10	Net interest paid	(216.922)	3.293	-	3.293	**(213.629)**
11	Tax paid	(30.207)	-	(1.516)	1.516	**(28.691)**
12	**Net cash generated from operating activities**	453.585	3.293	6.464	(3.171)	**450.414**
C	**Investing activities**					
13	Capital expenditure	(470.611)	-	-	-	**(470.611)**
14	Grants & Contributions	-	-	-	-	**-**
15	Disposal of fixed assets	1.580	-	-	-	**1.580**
16	Other	(257.000)	-	-	-	**(257.000)**
17	**Net cash used in investing activities**	(726.031)	-	-	-	**(726.031)**
18	**Net cash generated before financing activities**	(272.446)	3.293	6.464	(3.171)	**(275.617)**
D	**Cashflows from financing activities**					
19	Equity dividends paid	(68.000)	-	(6.464)	6.464	**(61.536)**
20	Net loans received	328.595	(3.293)	-	(3.293)	**325.302**
21	Cash inflow from equity financing	22.000	-	-	-	**22.000**
22	**Net cash generated from financing activities**	282.595	(3.293)	(6.464)	3.171	**285.766**
23	**Increase (decrease) in net cash**	10.149	(0.000)	-	(0.000)	**10.149**

1 The principal differences between the statutory accounts and the APR are in respect of capitalised interest, and the classification of grants and contribution income. For regulatory reporting, capitalised interest is not permitted and therefore the depreciation of capitalised interest has been removed here. Grants and contributions (G&C) income is included in revenue within the statutory accounts, but classified as other income in the regulatory

accounts. The other adjustments are a reclassification of debt issue costs from interest paid to net loans received and a reclassification of pensions operating expenditure from contributions to movements in provisions.

2 These adjustments, explaining the difference between statutory and RAG definitions, are summarised in the table below.

Line description	Adjustments				Total adjustments £m
	Reclassification of issue costs £m	Capitalisation of interest and related depreciation £m	Reclassification of G&C and rental income £m	Reclassification of pension operating expenditure £m	
Operating profit	-	12.266	(75.359)	-	(63.093)
Other income	-	-	75.359	-	75.359
Depreciation	-	(12.263)	-	-	(12.263)
Pension contributions	-	-	-	(3.328)	(3.328)
Movement in provisions	-	-	-	3.328	3.328
Profit on sale of fixed assets	-	(0.003)	-	-	(0.003)
Net interest paid	3.293	-	-	-	3.293
Net loans received	(3.293)	-	-	-	(3.293)

3 The following commentary is in relation to the appointed business only.

Operating profit (1D.1)

4 The reduction in operating profit is explained in the commentary to table 1A - essentially it is the result of increased operating costs due to extreme weather events, partially offset by increased revenue.

Other income and amortisation (1D.2 and 1D.4)

5 Other income has increased from £16.1 million in the previous year to £53.4 million in 2018/19. The increase is due principally to recognising grants and contribution income immediately rather than being deferred over the life of the related assets - this change was a consequence of the new accounting standard IFRS 15. This also explains why there is no amortisation of grants and contributions in the current year.

6 The £22.0 million included within the statutory column relates to assets adopted for nil consideration. This is shown within a separate line within the statutory accounts as an adjustment within operating activities, therefore this has been included within Other income within the regulatory accounts.

Changes in working capital (1D.5)

7 Changes in working capital were modest in 2018/19, compared with an increase of £11.6 million in the prior year. This is largely due to the timing of certain payments around the year end which were paid later than in the previous year.

Pension contributions (1D.6)

8 The pension contributions comprise the defined benefits scheme deficit reduction payment of £12.5 million, a £3.3 million provision recognised in respect of AWS' obligation under the principle of guaranteed minimum pension (GMP) equalisation between male and female employees, and the final regular employer's contribution in April 2018.

Profit on sale of fixed assets (1D. 8)

9 The reduction in profit on sale of fixed assets reflects the lower number of disposals in the year.

Cash generated from operations (1D.9)

10 Net cash inflow from operating activities increased by £57.0 million from £635.7 million in 2018 to £692.7 million in 2019. This is consistent with recognising grants and contributions income within 'other income' rather than investing activities as in the previous year.

Net interest paid (1D.10)

11 Net interest paid increased from £22.9 million in the previous year to £213.6 million in the current year - the increase is due principally to the cessation of inter-company interest received (2018: £192.3 million) from Anglian Water Services Holdings Limited (AWSH) following settlement of the inter-company loan in March 2018.

Tax paid (1D.11)

12 The increase in tax paid to Group reflects the additional tax arising on the adoption of IFRS 15, partially offset by lower taxable profits than in the previous year.

Grants and contributions (1D.14)

13 Grants and contributions receipts are now classified as other income which explains why this number is nil in the current year.

Other investing activities (1D.16)

14 In the previous year this line included the receipt of the one-off £1,602.6 million from AWSH in settlement of the inter-company loan in order to simplify the group structure as mentioned previously. In 2018/19 this represents the investment of cash in money market deposits.

Equity dividends paid (1D.19)

15 Equity dividends paid in the year was £61.5 million. In the previous year total dividends paid amounted to £1.9 billion, however, only £79.3 million of this was available to the ultimate shareholders. Following the simplification to the group structure in March 2018 there is no need for the round trip dividend to service inter-company debt, nor the other one-off dividends to facilitate the group simplification and non-household market reform.

Cash inflow from equity financing (1D.21)

16 Following approval from our lenders in October 2018, the AWG group made an equity injection into the regulated company of £22 million. This was the first of what is expected to be a series of equity injections to be made by AWG over the period to 2025 to help reduce AWS' gearing.

Table 1E - Net Debt Analysis

	Line description	Units	Interest rate risk profile			
			Fixed rate	Floating rate	Index linked	Total
1	Borrowings (excluding preference shares)	£m	2,414.699	416.533	3,992.595	**6,823.827**
2	Preference share capital	£m				**-**
3	Total borrowings	£m				**6,823.827**
4	Cash	£m				**(257.293)**
5	Short term deposits	£m				**(297.000)**
6	Net Debt	£m				**6,269.534**
7	Gearing	%				**78.55%**
8	Adjusted gearing	%				**78.10%**
9	Full year equivalent nominal interest cost	£m	107.604	11.408	201.244	**320.256**
10	Full year equivalent cash interest payment	£m	107.604	11.408	102.951	**221.963**
A	**Indicative interest rates**					
11	Indicative weighted average nominal interest rate	%	4.46%	2.74%	5.04%	**4.69%**
12	Indicative weighted average cash interest rate	%	4.46%	2.74%	2.58%	**3.25%**
13	Weighted average years to maturity	nr	7.06	7.41	16.41	**13.01**

Borrowings (excluding preference shares) (1E.1)

1 As per RAG 4.08 Section 1, borrowings are shown at nominal values plus indexation to 31 March 2019. Accrued interest, operating leases and fair value adjustments are excluded (and so the numbers shown are different to our statutory accounts prepared on an IFRS basis). Debt issue costs have also been excluded. A reconciliation of debt between regulatory accounts and statutory accounts is shown below. The mix of debt has remained broadly similar to prior year as discussed in more detail in the commentary in table 4H.

	Total £m
Borrowings (per regulatory definition)	**6,823.83**
Fair value IFRS adjustments[1]	161.25
Strip out accreted indexation on swaps[2]	(66.96)
Adjust issue costs[3]	(32.53)
Adjust for leases added per Regulatory requirement[4]	(33.75)
Non-current and Current Debt as per Table 1C	6,851.84
Debt interest accrual[5]	82.74
2019 IFRS debt (per statutory accounts)	**6,934.58**

[1]This represents the IFRS fair value accounting adjustment to applicable debt and derivatives due to spot foreign exchange and fair value hedge adjustments.

[2] Strip out accreted indexation of RPI linked derivatives included in the regulatory definition but classified as derivatives under IFRS

[3] Directly attributable debt issue costs added to the reflect IFRS treatment but excluded from the regulatory definition.

[4] Adjust for additional lease liabilities added to reflect the best estimate of the impact of IFRS 16 (Leases) as the standard has not yet been adopted in the IFRS statutory accounts.

[5] Under the RAGs debt is shown excluding accrued interest. Under IFRS debt is shown including accrued interest.

2 Fixed rate debt has increased year on year due to the following movements:

- £300 million green bond issue which is a fixed rate bond in the year
- A total of £150 million USPP (US Private Placement) issues which are all fixed rate

3 These are offset by reductions in fixed rate debt due to the following:

- £200 million CPI overlay swap which has the effect of decreasing fixed rate borrowings in the year and increasing index-linked borrowings
- The £65.9 million Japanese Yen (JPY) trade was regarded as synthetic index-linked debt as the floating interest payments on this trade were cash flow matched to a longer RPI swap. When the JPY was repaid, we needed to ensure that we still had sufficient floating rate interest to match the receipts under the RPI swap so the decision was taken to convert an existing USPP bond of £73.3 million from fixed rate debt to floating. Consequently, inflation linked debt is unchanged but there is a fixed-floating impact as a result of this additional cash matching derivative being executed
- £6.2 million of payments in relation to finance leases

4 Floating rate debt has moved marginally due to the JPY maturity described above resulting in the differential between the £65.9 million and £73.3 million becoming floating versus prior year.

5 Index-linked debt has increased due to the following:

- £129.6 million indexation in the year
- £34.6 million of paydowns in the year
- £200 million CPI overlay swap as described in the fixed rate section above.

Cash and short term deposits (1E.4)

6 Cash and short-term deposits are split as per RAG 4.08. This differs from the statutory accounting treatment in that all money market deposits are shown as short-term deposits here, whereas in the statutory accounts these are split based on their original term to maturity with those with an initial term of 3 months or less classified as cash and cash equivalents.

7 The cash and short term deposits position reported in Table 1E differs from the balance sheet in 1C due to the following adjustments:

Description	Amount £m	Comment
Cash per Table 1C	550.994	
Non-Appointed Adjustment	1.517	Notional adjustment to cash to reflect non-appointed business on the face of the table 1C. Cash is still available for liquidity purposes.
AWSF Cash	1.782	Cash held in AWSF to settle liabilities on behalf of AWSL. This is reported as an intercompany debtor in Table 1C, and is available on immediate notice.
Cash per Table 1E	554.293	

Adjusted gearing (1E.8)

8 The adjusted gearing shown is Anglian Water's 'Senior RAR' ratio as at 31 March 2019 – representing net debt divided by year end RCV.

Interest (1E.9-1E.12)

9 Fixed interest has decreased year on year as we have been pursuing opportunities to improve financeability headroom, notably through CPI inflation linked debt and swaps. These new CPI swaps have moved fixed rate margins to index-linked.

10 Floating interest has increased by circa 20 basis points in the year reflecting the movement in LIBOR year on year.

11 The forecast impact of inflation has decreased from 3.7 per cent in the prior year to 2.5 per cent at 31 March 2019, and this has been the primary cause of the reduction in the weighted average nominal interest rate. The increase in the weighted average cash interest rate year on year reflects changes in our portfolio of index linked borrowings, with CPI borrowings and derivatives now being used as well as RPI borrowings and derivatives. The cash interest rate of CPI debt is higher than RPI debt.

12 The interest cash balance is calculated on debt only based on the year end position, therefore will be different to the statutory accounts. Nominal interest is calculated based on the cash number plus year end inflation of 2.4 per cent for index-linked debt as per the definition.

Weighted average years to maturity (1E.13)

13 The weighted average maturity has moved downwards in line with natural lifecycle of debt being one year on, offset slightly by the raising of new fixed rate debt and the maturity of the Japanese Yen close to the prior year end.

Table 1F - Financial Flows

	Line description	Units	DPs	12 Months ended 31 March 2019						Average 2015-19					
				%			£m			%			£m		
				Notional returns and notional regulatory equity	Actual returns and notional regulatory equity	Actual returns and actual regulatory equity	Notional returns and notional regulatory equity	Actual returns and notional regulatory equity	Actual returns and actual regulatory equity	Notional returns and notional regulatory equity	Actual returns and notional regulatory equity	Actual returns and actual regulatory equity	Notional returns and notional regulatory equity	Actual returns and notional regulatory equity	Actual returns and actual regulatory equity
A															
1	Return on regulatory equity	£m	3	5.55%	3.18%	5.55%	141.674	81.201	81.201	5.59%	3.04%	5.59%	139.488	75.777	75.777
2	Actual performance adjustment 2010-15	£m	3	-0.36%	-0.21%	-0.36%	(9.190)	(5.267)	(5.267)	-0.33%	-0.18%	-0.33%	(8.235)	(4.473)	(4.473)
3	Adjusted Return on regulatory equity	£m	3	5.19%	2.97%	5.19%	132.484	75.934	75.934	5.26%	2.86%	5.26%	131.254	71.304	71.304
4	Regulatory equity	£m	3	2,552.678	2,552.678	1,463.084				2,495.319	2,495.319	1,355.580			
B	**Financing**														
5	Gearing	£m	3	0.00%	1.29%	2.25%	-	32.935	32.935	0.00%	1.38%	2.55%	-	34.558	34.558
6	Variance in corporation tax	£m	3	0.00%	-1.52%	-2.65%	-	(38.706)	(38.706)	0.00%	-2.46%	-4.53%	-	(61.432)	(61.432)
7	Group relief	£m	3	0.00%	0.00%	0.00%	-	-	-	0.00%	1.05%	1.92%	-	26.087	26.087
8	Cost of debt	£m	3	0.00%	0.10%	0.18%	-	2.667	2.667	0.00%	-0.22%	-0.53%	-	(5.434)	(7.164)
9	Hedging instruments	£m	3	0.00%	-0.01%	-0.01%	-	(0.190)	(0.190)	0.00%	-0.00%	-0.01%	-	(0.121)	(0.121)
10	Financing total	£m	3	5.19%	2.85%	4.96%	132.484	72.640	72.640	5.26%	2.60%	4.66%	131.254	64.962	63.232

C **Operational performance**

11	Totex out / (under) performance	£m	3	0.00%	0.91%	1.60%	-	23.346	23.346	0.00%	1.63%	3.00%	-	40.627	40.627
12	ODI out / (under) performance	£m	3	0.00%	0.48%	0.83%	-	12.191	12.191	0.00%	0.42%	0.77%	-	10.474	10.474
13	Retail out / (under) performance	£m	3	0.00%	0.00%	0.00%	-	0.026	0.026	0.00%	0.01%	0.01%	-	0.167	0.167
14	Other exceptional items	£m	3	0.00%	0.00%	0.00%	-	-	-	0.00%	0.04%	0.08%	-	1.060	1.060
15	Operational performance total	£m	3	0.00%	1.39%	2.43%	-	35.563	35.563	0.00%	2.10%	3.86%	-	52.328	52.328
16	Total earnings	£m	3	5.19%	4.24%	7.40%	132.484	108.203	108.203	5.26%	4.70%	8.52%	131.254	117.290	115.560
17	RCV growth from RPI inflation	£m	3	3.06%	3.06%	3.06%	78.112	78.112	44.770	2.50%	2.50%	2.50%	62.383	62.383	33.890
18	Total shareholder return	£m	3	8.25%	7.30%	10.46%	210.596	186.315	152.973	7.76%	7.20%	11.02%	193.637	179.672	149.449
19	Net dividend	£m	3	4.00%	2.08%	3.63%	102.107	53.145	53.145	4.00%	3.74%	6.88%	99.813	93.329	93.329
20	Retained value	£m	3	4.25%	5.22%	6.82%	108.489	133.170	99.828	3.76%	3.46%	4.14%	93.824	86.343	56.120

E **Dividends reconciliation**

21	Gross dividend	£m	3	4.00%	2.08%	3.63%	102.107	53.145	53.145	4.00%	23.90%	43.99%	99.813	596.274	596.274
22	Interest received on intercompany loans	£m	3	0.00%	0.00%	0.00%	-	-	-	0.00%	20.16%	37.10%	-	502.945	502.945
23	Net dividend	£m	3	4.00%	2.08%	3.63%	102.107	53.145	53.145	4.00%	3.74%	6.88%	99.813	93.329	93.329

Footnotes:

1. Numbers included in the above table are in 2012/13 prices in line with Ofwat Regulatory Accounting Guidelines (RAGs).

2. The numbers in the percentage column above are subject to rounding difference as a result of the way that the percentages are calculated in the Ofwat table templates. These differences do not have a material impact on the numbers presented.

3. In the dividends reconciliation the line '1F.22: Interest Receivable on Inter-company Loans' also includes, for 2017/18 only, the one off dividends to fund the settlement of an inter-company loan of £1,602.6 million (2012/13 prices: £1,426.6 million) and to fund the transfer of the non-household retail business (£62.2 million (2012/13 prices: £55.3 million)). From 1 April 2018, following the settlement of inter-company loan in full, the internal interest and corresponding dividend payments are no longer necessary.

Introduction

1) The actual returns and actual regulated equity versus actual returns and notional regulated equity

1 Where actual regulated equity is different from Ofwat's notional regulated equity of 37.5 per cent of RCV, the actual returns and actual regulated equity column in the table above will show different percentage returns for the same performance. In our case, as a consequence of having higher gearing and less regulated equity than the notional company, any underperformance will adversely impact returns disproportionately for shareholders. Conversely, any outperformance will deliver proportionately greater returns. This is evident in the financing and operational performance shown in table 1F.

2) The impact of gearing on cost of debt (1F.5 and 1F.8)

2 The gearing outperformance in row 1F.5 above should be read in conjunction with row 1F.8 which measures the actual cost of debt out/under-performance compared to the FD. All else being equal, the benefit of higher gearing in 1F.5 above should be offset by an increase in cost of debt in row 1F.8 associated with higher gearing (Modigliani-Miller theorem).

3 However, Anglian Water is able to mitigate the additional debt costs due to higher gearing as our 'securitised', highly covenanted structure and associated operational covenants protect customers and lenders. Our covenants, which include commitments to support strong credit ratings, are one of the main reasons we can raise debt at rates that are competitive with those of our peers with lower gearing. This structure transfers a higher proportion of risk on to the shareholders in the event of any operational or financial underperformance.

4 Our customers benefit from higher gearing as the tax benefit of higher tax deductible interest costs have been passed on to them through lower bills. This is a consequence of the price setting mechanism whereby the tax revenue building block reflects actual gearing as opposed to notional gearing.

5 We raise debt on debt plus derivative arrangements in order to achieve the most efficient financing costs. This allows the business to access a broader range of markets for funding (including US and EU debt investors) and as such allows the business to select the best priced market for each issuance as funding is required. As a consequence we report this as cost of debt on row '1F.8 Cost of Debt' as these are not transactions for hedging purposes.

6 A recent example being two transactions that were raised in Autumn 2018; a fixed sterling US Private Placement debt transaction was swapped to CPI with a strong UK Financial Institution with all cash flows matching resulting in a lower net cost of debt of CPI + 0.348%. This compared with a sterling CPI UK Private Placement debt transaction with a cost of debt CPI + 0.835%.

3) Group relief out/(under) performance (1F.7)

7 Where losses are surrendered to Anglian Water under the group relief regulations it pays for this group relief at the current rate of corporation tax. This charge is currently accrued for as there is an agreement in place that Anglian Water will pay for these losses when it receives the benefit of the capital allowances that were disclaimed in order to generate the taxable profits against which the losses were utilised.

8 The exception to this has been where losses were surrendered from our intermediary parent company, Anglian Water Services Holdings Limited (AWSH), which were as a result of the inter-company interest that was paid to us under the inter-company loan which was repaid in March 2018. This is detailed in the table below:

	2015/16 2012/13 Prices £m	2016/17 2012/13 Prices £m	2017/18 2012/13 Prices £m	2018/19 2012/13 Prices £m	Average 2012/13 Prices £m
Interest paid by parent	181.9	177.6	170.7	0.0	132.6
Interest received by Anglian Water	181.9	177.6	170.7	0.0	132.6
Tax rate	20%	20%	19%	19%	19.5%
Tax payable on interest received	36.4	35.5	32.4	0.0	26.1
Group relief received from parent	36.4	35.5	32.4	0.0	26.1

9 This has been agreed with HM Revenue & Customs and is consistent with the FD. In the table above, the interest paid by the parent and interest received by Anglian Water is zero in 2018/19 as the inter-company loan was settled in full in the prior year.

10 As the FD tax calculation discounts the impact of this inter-company interest when calculating the appointee profit/loss and corresponding tax allowance, there is an equal and opposite tax underperformance in row B6 'Variance in Corporation tax' as illustrated in the reconciliation table for each year.

11 There is therefore no financial benefit to the shareholders in relation to these group relief arrangements.

4) Effect of inflation on cost of debt out/(under) performance (1F.8)

12 The real cost of fixed rate debt is influenced by the actual inflation rate which is subtracted from the nominal cost of debt to derive the real cost of debt. In setting the FD, Ofwat assumed an inflation rate of 2.80 per cent for embedded and new debt in order to derive the real allowed cost of debt.

13 All else being equal, higher inflation will therefore decrease the real cost of non-index linked debt and vice versa for lower inflation. In years when inflation is higher than the Ofwat assumed 2.80 per cent, all else being equal, the real cost of debt outperformance will increase (with the exception of the real cost of index linked debt which is not directly impacted by the actual level of inflation). This is illustrated in the table in appendix 1 to this section.

14 The mix of embedded debt between fixed, floating and index linked debt, will also therefore impact real cost of debt out/(under) performance, when inflation differs from Ofwat's 2.80 per cent assumption. The greater the proportion of fixed debt, the greater real cost of debt outperformance when inflation is higher than Ofwat's assumed 2.80 per cent and vice versa.

15 Over half of our debt is index linked debt and will therefore not be impacted by any movement in the annual rate of inflation away from the 2.80 per cent inflation assumed by Ofwat at the PR14 FD.

5) Effect of hedging instruments on real cost of debt out/(under) performance (1F.9)

16 The RAGs require an impact of hedging "as calculated by the business". In the absence of any further clarification and in line with RAG 3.11, we have calculated this using the IFRS 9 cost of hedging concept which is consistent with the treatment in the statutory accounts. IFRS 9 identifies 'costs of hedging' as the time value of options, the forward element of forward contracts and foreign currency basis spreads on cross currency interest rate swaps as applicable for hedge accounting. Anglian Water holds a number of cross currency interest rate swaps which generate the cost of hedging reported in line 1F.9. Other debt plus derivatives used to raise debt at the lowest cost is reported in cost of debt line 1F.8 as explained in paragraphs 5 and 6.

Commentary – 12 Months ended 31 March 2019

A – Equity base

Actual performance adjustment 2010-2015: (0.36) per cent vs. (0.21) per cent notional (1F.2)

17 This relates to the PR09 out/(under) performance adjustments, contained in the 'companies populated PR14 financial models file' (Post financeability adjustments). The small underperformance relates to adjustments in respect of the previous AMP, namely the Revenue Correction Mechanism offset, in part, by the reward received for Service Incentive Mechanism (SIM) and an Opex Incentive Adjustment. The above excludes totex menu additional income adjustments as this is not related to PR09 out/(under) performance.

B - Financing

Gearing out/(under) performance: 2.25 per cent vs. 1.29 per cent notional (1F.5)

18 The actual regulated equity to RCV ratio of 21.5 per cent compares to the 37.5 per cent assumed by Ofwat for a notional company. The calculation in row 1F.5 shows that the favourable impact of replacing more expensive cost of equity, 5.55 per cent, with cheaper cost of debt, 2.59 per cent, is 2.25 per cent for 2018/19. The outperformance of the notional company is lower at 1.29 per cent due to the higher equity denominator as discussed in paragraph [1] of the introduction section above. We also note that, as explained in paragraphs 2-6 of the introduction section above, this line should be read in conjunction with 1F.8 below.

Cost of debt out/(under) performance: 0.18 per cent vs. 0.10 per cent notional (1F.8)

19 The reason for the cost of debt outperformance in row 1F.8 for 2018/19 of 0.18 per cent can be largely explained by the impact of average RPI inflation in the year, 3.06 per cent, being higher than assumed by Ofwat, 2.80 per cent. As explained in paragraphs 12-15 as a consequence of higher inflation, our actual real cost of fixed debt in the year is lower than assumed in the FD.

20 It should be noted that the outperformance of the notional company of 0.10 per cent shown in the table is calculated in the Ofwat excel data table using the actual outperformance of £2.667 million. The outperformance calculated using the methodology specified in RAG 4.08 should be £2.161 million, which equates to a return on notional regulatory equity of 0.08 per cent. Although this affects the notional column, this does not affect the actual return and actual regulatory equity column.

Hedging instruments out/(under) performance: (0.01) per cent vs. (0.01) per cent notional (1F.9)

21 The cost of hedging for the year of £0.2 million as defined in paragraph 16 represents the premium paid on certain swaps as a result of funds being raised in currency other than sterling. As there was no allowance for hedging in the FD, this cost results in an underperformance of 0.01 per cent in both the actual returns and actual regulatory equity column and the actual returns and notional regulatory equity column.

Variance in corporation tax and group relief out/(under) performance: (2.65) per cent vs. (1.52) per cent notional (1F.6 and 1F.7)

22 The adverse variance in corporation tax compares the tax allowance included in the FD to the actual tax charge in the regulatory accounts.

23 As detailed in the introduction in paragraphs 7-11, in order to understand the underlying tax out/(under) performance of the business, lines 1F.6 and 1F.7 should be viewed in totality as the group relief outperformance is matched by a corresponding underperformance in the variance in corporation tax line. The underperformance in the year of 2.65 per cent primarily reflects a charge arising on the transition to IFRS 15 and the disclaiming of capital allowances to utilise the surplus ACT asset held on the balance sheet. These disclaimers were not envisaged when the FD was prepared and therefore were not included in the tax allowance in the FD. A full reconciliation can be seen in the following table. The effect of a change in tax rate refers to the reduction in corporation tax from 20 per cent, which was allowed in the FD, to 19 per cent in 2018. The percentage underperformance is higher than the notional company reflecting the lower regulated equity used as a denominator.

	2019							
	Actual Outturn	Actual 12/13 price	FD	Variance	Tax rate	Tax effect	Return on notional regulated equity	Return on actual regulated equity
	A	B	C	D=C-B	E	D*E		
	£m	£m	£m	£m	(allowed)	£m	%	%
The tax payable at the standard rate of corporation tax on the profit/(loss) on appointed activities								
Profit for the year per regulatory accounts	(55.8)	(48.2)						
IFRS 9 adjustments	98.4	85.0						
Interest received from Parent Company	-	-						
	42.6	36.8	33.4	3.4	20%	(0.7)		
Any adjustment for accelerated or deferred capital allowances								
Disallowable depreciation[1]	266.4	230.1	246.4	(16.3)				
Allowable capital allowance[2]	(181.4)	(156.6)	(212.2)	55.6				
	85.0	73.4	34.2	39.2	20%	(7.8)		
Other adjustments								
IFRS 15[3]	197.7	170.7	-	170.7	20%	(34.1)		
Other FD adjustments[4]	(49.8)	(43.0)	(26.5)	(16.5)	20%	3.3		
Effect of change in tax rate						2.4		
Taxable profit	275.5	237.9	41.1	196.8		(37.0)		
Corporation tax charged at applicable tax rate	(52.4)	(45.3)	(8.3)	(37.0)				
Any amounts for prior year adjustments	(2.0)	(1.7)	-	(1.7)		(1.7)		
Corporation tax charge	(54.4)	(47.0)	(8.3)	(38.7)		(38.7)	-1.52%	-2.64%
Tax on internal interest income group relieved						-	0.00%	0.00%
Variance in corporation tax						**(38.7)**	**-1.52%**	**-2.64%**
Regulated equity base £m							2,553	1,463
Group relief								
Group relief in respect of tax on internal intercompany interest received (2012-13 price)						**-**	**0.00%**	**0.00%**

1 Disallowable depreciation disclosed above includes both permanent differences and timing differences. This differs from that described as depreciation and amortisation in the tax reconciliation in the notes to the APR, which only includes timing differences, with permanent differences disclosed in 'Items not deductible for tax purposes'.

2 Capital allowances are less than forecast in the FD due to our program of disclaiming capital allowances to allow recovery of ACT.

3 On adoption of IFRS 15 'Revenue from Contracts with Customers', previously deferred grants and contributions of £539.5 million have been recognised in equity. This change in accounting treatment has resulted in a transitional taxable profit of £197.7 million (2012/13 prices: £170.7 million).

4 Other FD adjustments primarily relate to adjustments for pension prepayments and non-infrastructure grants and contribution amortisation.

C - Operational out/(under) performance actual: 2.43 per cent vs. 1.39 per cent notional

Totex out/(under) performance: 1.60 per cent vs. 0.91 per cent notional (1F.11)

24 Totex outperformance in the year, as anticipated in last year's APR, reduced from the levels achieved in the early years of the AMP, but remained positive. This outperformance is amplified in the percentage return on actual equity column because of higher gearing which concentrates the outperformance on a smaller equity base. Conversely, any underperformance would have a similar proportional effect on the equity return.

25 By maximising the benefits of our alliances, along with innovation, supply chain efficiencies, lean process improvements, energy efficiency projects and general tight cost control, we are delivering efficiencies across our programme. These continue to be key areas of focus as we progress into the last year of the AMP.

26 Given the operating conditions and challenges with extreme weather conditions we face, we continue to invest heavily in the business, and see greater financial risks facing the business from Brexit related to both the supply and cost of goods purchased directly or indirectly from outside the UK, as well as from climate change. As a consequence, our forecast reported totex is expected to show lower outperformance or even underperformance in the final year of the AMP.

ODI out/(under) performance: 0.83 per cent vs. 0.48 per cent notional (1F.12)

27 Our ODI outperformance reflects a strong operational performance resulting in net rewards earned primarily on interruptions to supply, leakage and pollution incidents. Again, the percentage return of 0.83 per cent is higher than the notional company, 0.48 per cent, reflecting the lower regulated equity used as the denominator.

Retail out/(under) performance: 0.00 per cent vs. 0.00 per cent notional (1F.13)

28 Retail performance is largely in line with the FD, the small favourable result is due to various minor efficiencies across retail.

Total earnings: 7.40 per cent vs. 4.24 per cent notional (1F.16)

29 A strong operational performance, primarily driven by totex efficiencies and ODIs, has resulted in positive returns worth 2.43 per cent. There is a further net upside on pre tax financing of 2.43 per cent. Adding this to the adjusted return on regulated equity of 5.19 per cent and the tax underperformance of 2.65 per cent results in total earnings of 7.40 per cent on actual regulated equity.

RCV growth from RPI inflation: 3.06 per cent (1F.17)

30 This is calculated as RCV times average RPI inflation in the year, of 3.06 per cent, and represents the inflationary impact on the value of the RCV.

Net dividends: 3.63 per cent vs. 2.08 per cent notional (1F.19)

31 This represents dividends available to the parent company. The net dividend of £53.1 million is lower than the £102.1 million accounted for in the FD. As a consequence, the actual dividend yield based on the notional regulated equity is 2.08 per cent compared to 4.00 per cent accounted for in the FD (for a company performing in line with the FD). This reflects our commitment to reduce leverage as announced in March 2018, which means that despite our outperformance on totex and ODIs as well as good cash performance during the first four years of the current AMP, we have paid reduced dividends in years three and four of this AMP. We have also announced that we expect to see a reduction in dividends to our ultimate shareholders through to 2025.

32 Based on the actual regulated equity the dividend yield is 3.64 per cent reflecting the lower equity denominator as discussed above.

33 In addition, there was an equity injection of £22.0 million in the year (2012-13 prices: £19.0 million) which is not represented in the table. Offsetting the equity injection results in a net dividend of 1.34 per cent based on the notional regulated equity and 2.33 per cent based on the actual regulated equity.

Commentary – 2015/16 – 2018/19 Average

34 The average for the period 2015/16 - 2018/19 is calculated as the sum of the four years divided by four, rather than the average of the opening and closing positions. Although not defined in the RAGs, this is consistent with prior year shadow reporting.

A – Equity base

Actual performance adjustment 2010-2015: (0.33) per cent vs. (0.18) per cent notional (1F.2)

35 This relates to the PR09 out/(under) performance adjustments, contained in the 'companies populated PR14 financial models file' (Post financeability adjustments). The small underperformance relates to adjustments in respect of the previous AMP, namely the Revenue Correction Mechanism offset, in part, by the reward received for Service Incentive Mechanism (SIM) and an Opex Incentive Adjustment. The above excludes totex menu additional income adjustments as this is not related to PR09 out/(under) performance.

B - Financing

Gearing out/(under) performance: 2.55 per cent vs. 1.38 per cent notional (1F.5)

36 The actual regulated equity to RCV ratio of 20.3 per cent compares to the 37.5 per cent assumed by Ofwat for a notional company. The calculation in row 1F.5 shows that the favourable impact of replacing more expensive cost of equity, 5.60 per cent, with cheaper cost of debt, 2.59 per cent, is 2.55 per cent for the period 2015/16 - 2018/19. The outperformance of the notional company is lower at 1.38 per cent due to the higher equity denominator as discussed in paragraph [1] of the introduction section above. We also note that, as explained in paragraphs 2-6 of the introduction section above, this line should be read in conjunction with 1F.8 below.

Cost of debt out/(under) performance: (0.53) per cent vs. (0.22) per cent notional (1F.8)

37 As set out in paragraphs 12-15 of the introduction above, our cost of debt out/(under) performance is heavily impacted by the rate of actual inflation in the period. In the early years of the AMP, inflation was lower than the 2.80 per cent assumed by Ofwat. As a consequence of lower inflation, our actual real cost of debt in these years was higher than assumed in the FD and this largely explains the cost of debt underperformance in the first two years of the AMP and the AMP average. The underperformance of the actual company (0.53) per cent is higher than the notional company (0.22) per cent due to the higher equity denominator as discussed in the introduction section above.

Hedging instruments out/(under) performance: (0.01) per cent vs. (0.00) per cent notional (1F.9)

38 The average yearly cost of hedging for the period 2015/16 – 2018/19 of £0.2 million as defined in paragraph [16] represents the premium paid on certain swaps as a result of funds being raised in currency other than sterling. As there was no allowance for hedging in the FD, this cost results in an underperformance of 0.01 per cent in the actual returns and actual regulatory equity column and 0.00 per cent in the actual returns and notional regulatory equity column.

Variance in corporation tax and group relief out/(under) performance: (2.61) per cent vs. (1.41) per cent notional (1F.6 & 1F.7)

39 The variance in corporation tax compares the tax allowance included in the FD to the actual tax charge in the regulatory accounts.

40 As detailed in the introduction in paragraphs 7-11, in order to understand the underlying tax out/(under) performance of the business, lines 1F.6 and 1F.7 should be viewed in totality as the group relief outperformance is matched by a corresponding underperformance in

the variance in corporation tax line. The underperformance in the period 2015/16 - 2018/19 of 2.61 per cent is primarily due to the additional tax charges relating to the disclaiming of capital allowances in order to recover surplus Advance Corporation Tax (ACT) and the transitional tax charge as a result of adoption of IFRS 15 in 2018/19, details of which can be seen in the reconciliations for 2019 on page 49. The percentage underperformance is higher than the notional company reflecting the lower regulated equity used as a denominator.

C - Operational out/(under) performance: 3.86 per cent vs. 2.10 per cent notional

Totex out/(under) performance: 3.00 per cent vs. 1.63 per cent notional (1F.11)

41 Totex outperformance in the four years was strong, albeit with a lower level of outperformance in year four, as anticipated in last year's APR. This outperformance is amplified in the percentage return on actual equity column because of higher gearing, which concentrates the outperformance on a smaller equity base. Conversely, any underperformance would have a similar proportional effect on the equity return.

42 By maximising the benefits of our alliances, along with innovation, supply chain efficiencies, lean process improvements, energy efficiency projects and general tight cost control, we are delivering efficiencies across our programme. These continue to be key areas of focus as we progress through the AMP.

43 Given the operating conditions and challenges with extreme weather conditions we face, we continue to invest heavily in the business, and see greater financial risks facing the business from Brexit related to both the supply and cost of goods purchased directly or indirectly from outside the UK, as well as from climate change. As a consequence, our forecast reported totex is expected to show lower outperformance or even underperformance in the final year of the AMP.

ODI out/(under) performance: 0.77 per cent vs. 0.42 per cent notional (1F.12)

44 Our ODI outperformance reflects good operational performance in the period 2015/16 - 2018/19 resulting in net rewards earned primarily on leakage, water supply interruptions and pollution incidents. Again, the percentage return, of 0.77 per cent is higher than the notional company, 0.42 per cent, reflecting the lower regulated equity used as the denominator.

Retail out/(under) performance: 0.01 per cent vs. 0.01 per cent notional (1F.13)

45 Retail performance is largely in line with the FD, the small favourable result is due to various minor efficiencies across retail.

Other exceptional items: 0.08 per cent vs. 0.04 per cent notional (1F.14)

46 This reflects the £4.8 million (2012/13 prices: £4.2 million) profit on the disposal of the Retail non-household part of the business on 1 April 2017.

Total earnings: 8.52 per cent vs. 4.70 per cent notional (1F.16)

47 A strong operational performance, primarily driven by totex efficiencies and ODIs, has resulted in positive returns over the four year period worth 3.86 per cent. There is a further net upside on pre tax financing of 2.02 per cent. Adding this to the adjusted return on regulated equity of 5.26 per cent and the tax underperformance of 2.61 per cent results in total earnings over the four years of 8.74 per cent on actual regulated equity.

RCV growth from RPI inflation: 2.50 per cent (1F.17)

48 This is calculated as RCV times average RPI inflation in the period, of 2.50 per cent, and represents the inflationary impact on the value of the RCV.

Net dividends: 6.88 per cent vs. 3.74 per cent notional (1F.19)

49 This represents dividends available to the parent company. The net average annual dividend of £93.3 million is lower than the £99.8 million accounted for in the FD. As a consequence, the actual dividend yield based on the notional regulated equity is 3.74 per cent compared to 4.00 per cent accounted for in the FD (for a company performing in line with the FD). This reflects our commitment to reduce leverage as announced in March 2018, which means that despite our outperformance on totex and ODIs as well as good cash performance during the first four years of the current AMP and relatively high distributable free cash flow for the last year of the previous AMP, 2014/15, we have paid reduced dividends in years three and four of this AMP. We have also announced that we expect to see a reduction in dividends to our ultimate shareholders through to 2025.

50 Based on the actual regulated equity the dividend yield is 6.88 per cent reflecting the lower equity denominator as discussed above.

Appendix 1: Impact of RPI on allowed real fixed cost of debt out/(under) performance

51 The following table illustrates that, all else being equal, higher inflation will decrease the real cost of non-index linked debt and vice versa for lower inflation. In years when inflation is higher than the Ofwat assumed 2.80 per cent, all else being equal, the real cost of debt outperformance will increase, with the exception of the real cost of index linked debt which is not directly impacted by the actual level of inflation.

Impact of RPI on allowed real fixed cost of debt out/(under) performance

		Using assumed FD RPI	Lower RPI impact 2015/16	Higher RPI impact 2017/18
a	Nominal cost of debt	5.46%	5.46%	5.46%
b	Less RPI	2.80%	1.05%	3.74%
c	Real cost of debt[1]	2.59%	4.36%	1.66%
	Out/(under) performance vs allowed real cost of debt of 2.59%		(1.78%)	0.93%

The above table shows that the actual real cost of debt is more expensive than the FD in years when RPI is lower than 2.8% and less expensive in years when RPI is higher than 2.8%

1 The above example uses the Fisher equation to calculate the real cost of debt. This is consistent with the approach used in setting the allowed real cost of debt. We note that for the purposes of table 1F (Financial Flows), the RAGs require the Fisher equation not to be used in any calculation.

Table 2A - Segmental Income Statement

	Line description	Retail		Wholesale						Total
		Household	Non-Household	Water resources	Water Network+	Water Total	Wastewater Network+	Sludge	Wastewater Total	
		£m	£m	£m	£m	£m	£m	£m	£m	£m
1	Revenue - price control	85.208	-		461.146	**461.146**	697.664		**697.664**	**1,244.018**
2	Revenue - non price control	-	-		12.576	**12.576**	3.330		**3.330**	**15.906**
3	Operating expenditure	(74.979)	-	(38.093)	(215.201)	**(253.294)**	(220.110)	(59.451)	**(279.561)**	**(607.834)**
4	Depreciation - tangible fixed assets	(1.092)	-	(8.517)	(101.090)	**(109.607)**	(138.330)	(48.095)	**(186.425)**	**(297.124)**
5	Amortisation - intangible fixed assets	(1.226)	-	(1.665)	(3.707)	**(5.372)**	(31.188)	(0.450)	**(31.638)**	**(38.235)**
6	Other operating income	0.002	-	(0.027)	0.645	**0.618**	0.582	0.006	**0.588**	**1.208**
7	Operating profit before recharges	7.913	-			**106.067**			**203.958**	**317.939**
A	**Recharges in respect of 'principal use' assets**									
8	Recharges from other segments	(3.511)	-	(1.403)	(9.668)	**(11.071)**	(0.005)	(3.865)	**(3.870)**	**(18.452)**
9	Recharges to other segments	0.010	-	-	-	**-**	18.442	-	**18.442**	**18.452**
10	Operating profit	4.412	-			**94.996**			**218.530**	**317.939**
11	Surface water drainage rebates									**4.105**

Revenue (2A.1 and 2A.2)

1 Total revenue for the year was £1,259.9 million, up £31.6 million (2.6 per cent) on last year, which is explained in the table 1A commentary. Non-price control revenue reflects bulk supplies and rechargeable works income which is above 2017/18 level as a result of higher demand in the hot, dry 2018 summer.

Operating expenditure, depreciation and amortisation (2A.3-2A.5)

2 Operating costs of £943.2 million comprise operating expenditure of £607.8 million and depreciation (including amortisation) of £335.4 million. Overall operating costs (including depreciation) for the year increased by £20.0 million in real terms (2.2 per cent) from £923.2 million in 2017/18. The increase in opex costs (on a statutory, nominal basis for the whole business, excluding depreciation) is explained in the commentary to table 1A.

Other operating income (2A.6)

3 Other operating income represents the profit on disposal of fixed assets which was lower than the previous year due to fewer significant land disposals completed in 2018/19.

Recharges from/to other segments (2A.8 and 2A.9)

4 This is the recharge of depreciation on assets used by multiple price controls, primarily shared information technology and vehicle assets. As the business unit of principal use, wastewater network+ incurs the gross depreciation charge for these shared assets in the first instance.

Surface water drainage rebates (2A.11)

5 As a result of communication and sharing through social media there was an increase in the number of customers applying for rebates, compared with previous years. Following review, a proportion of these claims have resulted in rebates being granted in respect of surface water drainage charges; in some cases this was backdated up to six years.

Table 2B - Totex Analysis - Wholesale

	Line description	Water Resources £m	Water Network+ £m	Wastewater Network+ £m	Sludge £m	Total £m
A	**Operating expenditure**					
1	Power	9.342	29.235	39.847	(0.552)	**77.872**
2	Income treated as negative expenditure	(0.224)	(0.922)	(1.166)	(9.618)	**(11.930)**
3	Abstraction charges/ discharge consents	9.946	0.545	8.536	0.244	**19.271**
4	Bulk supply/ Bulk discharge	-	2.145	-	-	**2.145**
5	Other operating expenditure - renewals expensed in year (Infrastructure)	-	34.788	19.802	-	**54.590**
6	Other operating expenditure - renewals expensed in year (Non-Infrastructure)	-	-	-	-	**-**
7	Other operating expenditure - excluding renewals	13.620	102.938	131.393	65.746	**313.697**
8	Local authority and Cumulo rates	3.043	37.934	20.969	3.219	**65.165**
9	Total operating expenditure excluding third party services	35.727	206.663	219.381	59.039	**520.810**
10	Third party services	2.366	8.538	0.729	0.412	**12.045**
11	Total operating expenditure	38.093	215.201	220.110	59.451	**532.855**
B	**Capital Expenditure**					
12	Maintaining the long term capability of the assets - infra	0.558	28.736	20.570	-	**49.864**
13	Maintaining the long term capability of the assets - non-infra	4.310	57.102	106.913	17.112	**185.438**
14	Other capital expenditure - infra	1.098	34.898	19.941	-	**55.938**
15	Other capital expenditure - non-infra	4.271	33.362	70.682	2.086	**110.401**
16	Infrastructure network reinforcement	-	20.144	6.487	-	**26.631**
17	Total gross capital expenditure excluding third party services	10.237	174.242	224.594	19.198	**428.271**
18	Third party services	-	3.314	4.492	-	**7.806**
19	Total gross capital expenditure	10.237	177.556	229.085	19.198	**436.077**
C	**Grants and contributions**					
20	Grants and contributions	-	32.438	19.930	-	**52.368**
21	Totex	48.330	360.319	429.265	78.649	**916.564**
D	**Cash Expenditure**					
22	Pension deficit recovery payments	0.476	3.922	4.896	1.934	**11.228**
23	Other cash items	-	-	-	-	**-**
E	**Total**					
24	Totex including cash items	48.806	364.241	434.161	80.583	**927.792**

1 Total operating costs were £532.9 million, an increase of £18.0 million (3.5 per cent) in real terms on the previous report year (including atypical items).

2 Wholesale regulated capital expenditure for 2018/19 was £436.1 million, split water £187.8 million, wastewater £248.3 million.

A change in operating expenditure compared to 2017/18

3 Water services operating expenditure increased by £21.8 million (9.4 per cent) in real terms and against an underlying baseline. Wastewater costs decreased by £3.8 million (1.3 per cent) in real terms on an underlying basis.

Movement in costs 2017/18 to 2018/19

	Water £m	Wastewater £m	Total £m
2017/18 reported total operating expenditure	225.5	273.7	499.2
Atypical expenditure 2017/18	(0.8)	1.2	0.4
Underlying operating expenditure 2017/18	**224.7**	**275.0**	**499.7**
Inflation @ 3.06%	6.8	8.4	15.2
2017/18 underlying costs indexed to 2018/19 prices	**231.5**	**283.4**	**514.9**
2018/19 total operating expenditure	**253.3**	**279.6**	**532.9**
(Increase) / decrease in underlying expenditure from 2017/18	**(21.8)**	3.8	**(18.0)**

A Operating Expenditure

Key Variances in underlying costs (real terms)

Water

4 Total operating costs increased by £21.8 million in real terms with the key changes in the year including increased repair, maintenance and supply costs of c.£16.0 million to meet the increased demand over the summer and ensure that leakage and interruptions targets were met. Power cost increases of c.£5.0 million resulted from the increased summer demand and from the forward purchase of power at increased wholesale rates and the impact of additional non-wholesale charges. Third party service costs increased by £2.0 million due to the additional demand from Affinity Water and Severn Trent Water, also to meet summer demand. The total increases of c.£23.0 million were partially offset by reductions in rates costs and abstraction charges.

Wastewater

5 Underlying operating costs reduced in real terms by £3.8 million with the key variances due to improved CHP performance of c.£3.0 million and a reduction in other operating expenditure of c.£4.0 million offset by increased discharge consent costs of £2.1 million and a small increase in reactive repair work to our wastewater network of £1.6 million.

B Capital expenditure

6 The figures presented relate to all our regulated capital investment on wholesale services, including the Hartlepool region. Total capital investment comprises wholesale expenditure of £436.1 million and retail expenditure of £3.9 million.

7 Where possible, expenditure is allocated directly to the applicable price control. Where this is not possible because use of the asset is shared between two or more price controls (for example with capital expenditure on shared information systems, central offices and vehicles used by support services), expenditure is allocated to the price control of principal use and a subsequent recharge of the relevant depreciation charge is made between price controls.

8 This approach differs from that used in the preparation of the 2014 business plan submission where shared capital expenditure was allocated across price controls on the basis of asset use.

9 There have been no other material changes in allocation methodology since the 2014 business plan.

10 Total capital expenditure includes £7.8 million of spend on assets used to fulfil third-party agreements.

D Cash expenditure

11 The only cash expenditure incurred that is not included in our operating cost totals relates to pension deficit payments. The total paid in the year was £12.5 million, of which £11.2 million is in relation to wholesale.

Table 2C - Operating Cost Analysis - Retail

	Line description	Household £m	Non-household £m	Total £m
	Operating expenditure			
1	Customer services	17.825	-	**17.825**
2	Debt management	9.856	-	**9.856**
3	Doubtful debts	26.041	-	**26.041**
4	Meter reading	3.436	-	**3.436**
5	Services to developers		-	**-**
6	Other operating expenditure	17.821	-	**17.821**
7	Total operating expenditure excluding third party services	74.979	-	**74.979**
8	Third party services operating expenditure	-	-	**-**
9	**Total operating expenditure**	74.979	-	**74.979**
10	Depreciation - tangible fixed assets	1.092	-	**1.092**
11	Amortisation - intangible fixed assets	1.226	-	**1.226**
12	**Total operating costs**	77.297	-	**77.297**
13	Debt written off	16.156	-	**16.156**

1 Total operating costs were £75.0 million, a decrease of £2.0 million (2.6 per cent) on the previous report year in real terms, and in line with our final determination.

2 Household retail capex was £3.9 million, primarily for the introduction of new and enhanced information services software used within the retail business. This spend on new software is primarily responsible for the increase in amortisation of intangible retail assets from the prior year.

3 Total household customers increased by c.31,000 in the year (1.1 per cent), with unmeasured customers down by c.31,000 (5.0 per cent) and measured customers increasing by c.62,000 (2.9 per cent).

Change in retail operating expenditure compared to 2017/18

Movement in costs 2017/18 to 2018/19

	Total £m
2017/18 total operating expenditure	74.7
Inflation @ 3.06%	2.3
2017/18 expenditure indexed to 2018/19 prices	**77.0**
2018/19 reported operating expenditure	**75.0**
Decrease in underlying retail operating costs	**(2.0)**

Key Variances (real terms)

4 The reduction in costs from the prior year is due to the lower bad debt charge, showing a reduction of £2.3 million in real terms and £1.4 million in nominal terms. The change in real terms is due to some one-off increases in costs in the prior year not repeating and the underlying improvement in our collection performance.

Debt written off

5 Total household debt written off was £16.2 million, a decrease of £11.2 million over the prior year write offs of £27.4 million (these figures differ slightly to those quoted in our statutory accounts which include the write off of some legacy non-household debt). The lower level of write offs was due to a fall in the number of accounts meeting our write-off criteria during the year and new initiatives introduced to collect old debt, with the result that we are treating a larger number of old accounts as potentially collectable.

Table 2D - Historic Cost Analysis of Fixed Assets - Wholesale and Retail

	Line description	Wholesale				Retail		Total
		Water Resources	Water Network+	Wastewater Network+	Sludge	Household	Non-Household	
		£m	£m	£m	£m	£m	£m	£m
A	**Cost**							
1	At 1 April 2018	291.838	5,318.434	6,915.653	697.804	10.151	-	**13,233.880**
2	Disposals	(0.922)	(14.559)	(6.077)	(1.121)	(0.034)	-	**(22.713)**
3	Additions	10.853	183.691	168.844	22.804	0.303	-	**386.495**
4	Adjustments	-	-	-	-	-	-	**-**
5	Assets adopted at nil cost	-	-	21.983	-	-	-	**21.983**
6	At 31 March 2019	301.769	5,487.566	7,100.403	719.487	10.420	-	**13,619.645**
B	**Depreciation**							
7	At 1 April 2018	(78.268)	(1,336.316)	(2,187.274)	(315.017)	(7.173)	-	**(3,924.048)**
8	Disposals	0.888	14.413	5.972	1.059	0.033	-	**22.365**
9	Adjustments	-	-	-	-	-	-	**-**
10	Charge for the year	(8.517)	(101.090)	(138.330)	(48.095)	(1.092)	-	**(297.124)**
11	At 31 March 2019	(85.897)	(1,422.993)	(2,319.632)	(362.053)	(8.232)	-	**(4,198.807)**
12	Net book amount at 31 March 2019	215.872	4,064.573	4,780.771	357.434	2.188	-	**9,420.838**
13	Net book amount at 1 April 2018	213.570	3,982.118	4,728.379	382.787	2.978	-	**9,309.832**
D	**Depreciation charge for year**							
14	Principal services	(8.517)	(101.048)	(138.330)	(48.095)	(1.092)	-	**(297.082)**
15	Third party services	-	(0.042)	-	-	-	-	**(0.042)**
16	**Total**	(8.517)	(101.090)	(138.330)	(48.095)	(1.092)	-	**(297.124)**

1 The net book amount includes £389.2 million in respect of assets in the course of construction, £111.0 million of newly constructed adopted assets and a £3,047.4 million revaluation of assets undertaken 1 April 2013.

2 Table 2D excludes intangible assets with a net book amount at 31 March 2019 of £188.7 million (2018: £161.3 million).

3 Additions includes £11.8 million of assets as a result of the adoption of the new revenue recognition standard IFRS 15 (Water Network+ £7.8 million, Wastewater Network+ £4.0 million). This would previously have been netted off by income received for diversions of water mains and sewers.

4 The sludge depreciation charge for the year is higher than previous years due to the depreciation on assets which have been retained for resilience purposes being accelerated over the remainder of AMP 6 as these assets will no longer form part of the sludge treatment strategy from 1 April 2020. The resilience assets depreciation increase was effective from 1 October 2017 resulting in a higher charge for the second half of 2018 and the whole of 2019 and 2020.

5 The depreciation charge for third party services relates to fluoridation assets. None of our other third party expenditure is incurred on assets used solely for the fulfillment of third party agreements. As such all other third party expenditure is included within the principal services asset values.

Assumptions used

6 In accordance with RAG 2.07, section 2.3.2, where assets are used by more than one business unit, these have been reported in full in the business unit of principal use. A recharge based on depreciation is made between business units to account for the use of these assets by the non-principal user(s).

7 Due to the above, all management and general assets have been assigned to wastewater or water according to their project types except where they have been identified as being principally Retail assets.

8 An offline assessment is made to determine whether assets are solely wholesale, solely retail or shared between the two.

Table 2E - Analysis of Capital Contributions and Land Sales - Wholesale

	Line description	Current year			
		Fully recognised in income statement	Capitalised and amortised (in income statement)	Fully netted off capex	Total
		£m	£m	£m	£m
A	**Grants and contributions - water**				
1	Connection charges (s45)	10.204	-	-	**10.204**
2	Infrastructure charge receipts (s146)	9.107	-	-	**9.107**
3	Requisitioned mains (s43, s55 & s56)	5.780	-	-	**5.780**
4	Other contributions (price control)	-	-	-	**-**
5	Diversions (s185)	6.799	-	-	**6.799**
6	Other contributions (non-price control)	0.548	-	-	**0.548**
7	**Total**	32.438	-	-	**32.438**
8	Value of adopted assets	-	-		**-**
B	**Grants and contributions - wastewater**				
9	Infrastructure charge receipts (s146)	10.858	-	-	**10.858**
10	Requisitioned sewers (s100)	1.517	-	-	**1.517**
11	Other contributions (price control)	4.356	-	-	**4.356**
12	Diversions (s185)	3.099	-	-	**3.099**
13	Other contributions (non-price control)	0.100	-	-	**0.100**
14	**Total**	19.930	-	-	**19.930**
15	Value of adopted assets	21.983	-		**21.983**

	Line description	Current year		
		Water	Wastewater	Total
		£m	£m	£m
C	**Movements in capitalised grants and contributions**			
16	Brought forward	-	-	**-**
17	Capitalised in year	-	-	**-**
18	Amortisation (in income statement)	-	-	**-**
19	Carried forward	-	-	**-**
D	**Land sales**			
20	Proceeds from disposals of protected land	0.652	0.427	**1.079**

A - Grants and contributions - water

Connection charges (2E.1)

1 Due to the removal of the restriction to section 45 connection charges that was in place in previous years, 2018-19 connection charges includes £1.3 million of self-lay connection charges which would previously have been classified under requisitioned mains as well the income from domestic meters.

Diversions (2E.5)

2 Diversions income is fully recognised in the income statement from 1 April 2018 instead of being netted off capex as in previous years. Diversion income has also increased in 2018/19 due to several major diversion projects including HS2 rail, A14 road and East West rail.

Other contributions (non-price control) (2E.6)

3 Other contributions (non-price control) includes £0.5 million contribution for Hall water treatment works fluoridation.

B - Grants and contributions - wastewater

Other contributions (price control) (2E.11)

4 These include supervision fees relating to sewer adoptions and also reflect the RAG 4 change from previous years reclassifying sewer connection fees from non-price control to price control.

Diversions (2E.12)

5 Diversions income is fully recognised in the income statement from 1 April 2018 instead of being netted off capex as in previous years. Diversion income has also increased in 2018/19 due to several major diversion projects including HS2 rail , A14 road and East West rail.

Other contributions (non-price control) (2E.13)

6 These only include new sewer connections to existing sewers.

C - Movements in capitalised grants and contributions

Brought forward (2E.16)

7 Grants and contributions accounting changed as of 1 April 2018 due to the adoption of accounting standard IFRS 15 which resulted in the removal of all capitalised grants and contributions (deferred income assets), so there is no opening balance and no movements during 2018/19. As can be seen in sections A and B of table 2E, all current grants and contributions income is fully recognised in the income statement from 1 April 2018. Historical credit balances were written back directly to retained earnings.

D - Land sales

Proceeds from disposals of protected land (2E.20)

8 Proceeds are net of costs. Most proceeds are from the sale of minor pieces of land. There were no items requiring prior approval from Ofwat.

Table 2F - Household - Revenues by Customer Type

	Line description	Wholesale charges revenue £m	Retail revenue £m	Total revenue £m	Number of customers (000s)	Average household retail revenue per customer £
1	Unmeasured water only customer	20.061	1.914	21.975	94.641	**20.22**
2	Unmeasured wastewater only customer	72.175	4.971	77.146	245.483	**20.25**
3	Unmeasured water and wastewater customer	130.970	10.294	141.264	254.362	**40.47**
4	Measured water only customer	21.183	2.937	24.120	141.351	**20.78**
5	Measured wastewater only customer	116.301	11.659	127.960	569.715	**20.46**
6	Measured water and wastewater customer	547.469	53.433	600.902	1,499.124	**35.64**
7	**Total**	**908.159**	**85.208**	**993.367**	**2,804.676**	**30.38**

Total (2F.7)

1 The increase in total household revenue year on year reflects primarily the allowed regulatory price increase of 3.2 per cent and the growth in customer numbers, together with the value of the net under-accrual of £4.9 million recognised for 2017-18 (2016-17 under-accrual of £8.0 million) and an increase in demand, partly offset by the net impact of switching from unmeasured to measured supply.

2 The household retail revenue control is a total revenue control, which can be recovered across the household customer base. The allowed control is calculated by multiplying the cost to serve per service category by the number of unique customers served on each basis. The costs to serve including an allowed margin by service category are set out in the modification factor table (Table AA2.2) in the company specific appendix to the Final Determination.

3 Actual reported unmeasured retail revenue is £1.4 million above allowed revenue based on the weighted average number of unique customers by service. Measured retail revenue is £2.9 million lower than allowed revenues. This reflects the smearing of revenue recovery across the customer base, as allowed by the control.

4 The net position of £1.5 million under recovery (1.7 per cent of retail revenue) reflects the increased take up of the concessionary tariff Aquacare Plus but at lower levels of average usage as compared to forecast when setting charges.This effect was partly offset by the under-accrual from the prior year (£0.5 million) and the lower take-up of the concessionary social tariff LITE compared to forecast when setting charges meaning that the cross subsidy for the social/concessionary tariffs accounted for through retail revenue, is net under-recovered.

Table 2G - Non-household Water - Revenues by Customer Type

	Line description	Wholesale charges revenue £m	Retail revenue £m	Total revenue £m	Number of connections (000s)	Average non-household retail revenue per connection £
A	**Non-Default tariffs**					
1	Total non-default tariffs	-	-	-	-	-
B	**Default tariffs**					
2	Unmeasured (potable water)	-	-	-	-	-
3	Hartlepool Unmeasured (potable water)	-	-	-	-	-
4	Streamline Green (potable water) - (0.0Ml to 0.5Ml)	-	-	-	-	-
5	Streamline Orange (potable water) - (0.5Ml to 5.0Ml)	-	-	-	-	-
6	Streamline Orange (non-potable) - (0.0Ml to 5.0Ml)	-	-	-	-	-
10	Hartlepool Commercial (potable water) - (0.0Ml to 50.0Ml)	-	-	-	-	-
17	Special Agreements (potable water) - (0.0Ml +)	-	-	-	-	-
18	Special Agreements (non potable water) - (0.0Ml +)	-	-	-	-	-
19	Water supplies 5 to 50 MI	-	-	-	-	-
20	Water supplies 50 MI and over	-	-	-	-	-
21	Total default tariffs	-	-	-	-	-
22	**Total**	-	-	-	-	-

		Number of customers (000s)	Average non-household retail revenue per customer £
C	**Revenue per customer**		
23	Total	-	-

1 Line numbers shown are as per the Ofwat table templates, these numbers are not sequential due to lines marked as n/a not being included.

2 Table has been left blank as we have exited all non-household market activities. The value of wholesale water revenue for the year is £125.9 million.

Table 2H - Non-household Wastewater - Revenues by Customer Type

	Line description	Wholesale charges revenue £m	Retail revenue £m	Total revenue £m	Number of connections (000s)	Average non-household retail revenue per connection £
A	**Non-Default tariffs**					
1	Total non-default tariffs	-	-	-	-	**-**
B	**Default tariffs**					
2	Unmeasured (Sewerage)	-	-	-	-	**-**
3	Streamline Green (Sewerage) - (0.0Ml to 0.5Ml)	-	-	-	-	**-**
4	Streamline Orange (Sewerage) - (0.5Ml to 5.0Ml)	-	-	-	-	**-**
7	Unmeasured (Trade Effluent)	-	-	-	-	**-**
8	Streamline Green (Trade Effluent) - (0.0Ml to 0.5Ml)	-	-	-	-	**-**
9	Streamline Orange (Trade Effluent) - (0.5Ml to 5.0Ml)	-	-	-	-	**-**
12	Wastewater services 5 to 50 MI	-	-	-	-	**-**
13	Wastewater services 50 MI and over	-	-	-	-	**-**
24	Total default tariffs	-	-	-	-	**-**
25	Total	-	-	-	-	**-**

		Number of customers (000s)	Average non - household retail revenue per customer £
C	**Revenue per customer**		
26	Total	-	**-**

1 Line numbers shown are as per the Ofwat table templates, these numbers are not sequential due to lines marked as n/a not being included.

2 Table has been left blank as we have exited all non-household market activities. The value of wholesale wastewater revenue for the year is £124.7 million.

Table 2I - Revenue Analysis and Wholesale Control Reconciliation

	Line description	Household £m	Non-household £m	Total £m
A	**Wholesale charge - water**			
1	Unmeasured	80.206	0.369	**80.575**
2	Measured	254.996	114.197	**369.193**
3	Third party revenue	-	11.378	**11.378**
4	**Total**	335.202	125.944	**461.146**
B	**Wholesale charge - wastewater**			
5	Unmeasured	143.000	0.804	**143.804**
6	Measured	429.957	123.903	**553.860**
7	Third party revenue	-	-	**-**
8	**Total**	572.957	124.707	**697.664**
9	**Wholesale Total**	908.159	250.651	**1,158.810**
C	**Retail revenue**			
10	Unmeasured	17.179	-	**17.179**
11	Measured	68.029	-	**68.029**
12	Other third party revenue	-	-	**-**
13	**Retail total**	85.208	-	**85.208**
D	**Third party revenue - non-price control**			
14	Bulk Supplies - water			**10.066**
15	Bulk Supplies - wastewater			**3.329**
16	Other third party revenue			**1.687**
E	**Principal services - non-price control**			
17	Other appointed revenue			**0.824**
18	**Total appointed revenue**			**1,259.924**

	Line description	Water £m	Wastewater £m	Total £m
19	Wholesale revenue governed by price control	461.146	697.664	**1,158.810**
20	Grants & contributions	25.091	16.731	**41.822**
21	**Total revenue governed by wholesale price control**	486.237	714.395	**1,200.632**
22	Amount assumed in wholesale determination	488.440	712.764	**1,201.204**
23	Adjustment for in-period ODI revenue	3.559	-	**3.559**
24	Adjustment for WRFIM	(15.209)	(2.996)	**(18.205)**
25	**Total assumed revenue**	476.790	709.768	**1,186.558**
26	Difference	9.447	4.627	**14.074**

Amount assumed in wholesale determination (2I.22)

1 Wholesale revenue controls are set for water and wastewater separately. The values set out in the Final Determination in 2012/13 prices are repriced based on RPI to give the allowed revenue for 2018/19. This calculation of allowed revenue was adjusted for under/over recovery of allowed revenue for the 2016/17 charging year and for forecast over-recovery of allowed revenue for the 2017/18 charging year, in line with the mechanisms as set out in the PR14 reconciliation rulebook. It also included the in-period ODI reward for leakage performance in 2016/17. The resulting calculation of revenue is then used for setting charges for the 2018/19 Charges Scheme.

2 Allowed wholesale water revenue and wholesale wastewater revenue was calculated as £476.8 million and £709.8 million respectively.

Difference (2I.26)

3 The level of wholesale water revenue recovered from household customers is £9.4 million above allowed revenues. This over-recovery represents 2.0 per cent of allowed revenue. This over-recovery is split between main charges revenue (£4.9 million) and grants & contributions revenue (£4.5 million). Main charges over-recovery results from the under-accrual recognised for 2017/18 (£3.1 million) and higher demand in the hot, dry 2018 summer, partially off-set by more customers switching to measured charges than forecast when setting charges.

4 The level of wholesale wastewater revenue is £4.6 million above allowed revenue. The over-recovery represents 0.6 per cent of allowed revenues. The over-recovery results from the under-accrual recognised for 2017/18 (£1.3 million) and higher demand in the hot, dry 2018 summer, partially off-set by more customers switching to measured charges than forecast when setting charges.

Grants & contributions (2I.20)

5 We do not receive any grants. All current year contributions revenue governed by the wholesale price control was received in relation to new development activities.

6 Contributions in respect of water were greater than the indexed FD by £3.8 million as a result of the greater than originally anticipated levels of new development activity seen across our region. Contributions in respect of wastewater were less than the indexed FD by £1.0 million, primarily due to the impact of removing certain types of requisition offers to developers.

Table 2J - Infrastructure Network Reinforcement

	Line description	Network reinforcement capex £m	On site / site specific capex (memo only) £m
A	**Wholesale water network+ (treated water distribution)**		
1	Distribution and trunk mains	17.915	0.428
2	Pumping and storage facilities	2.229	0.464
3	Other	-	-
4	**Total**	20.144	0.893
B	**Wholesale wastewater network+ (sewage collection)**		
5	Foul and combined systems	5.392	0.018
6	Surface water only systems	-	-
7	Pumping and storage facilities	1.095	0.093
8	Other	-	-
9	**Total**	6.487	0.111

General assumptions (2J.1-2J.9)

1 Table 2J shows the total capital expenditure on network reinforcement split between below ground infrastructure assets and pumping and storage facilities.

2 The onsite / site specific capex is the expenditure included within total network reinforcement capex which relates to a specific new developments.

3 The source of the data is the project systems module of our SAP business management system. Each project holds as part of its master data Business Investment Category (BIC) codes which map the expenditure to infrastructure and non infrastructure, and between water and wastewater network+.

4 All network reinforcement spend is in relation to below ground infrastructure, pumping stations and storage facilities. No expenditure is therefore shown within "other".

Wastewater below ground infrastructure (2J.5-2J.6)

5 For wastewater network+ infrastructure spend, an assessment of all projects has been performed to determine whether the costs are in relation to foul and combined or surface water only systems.

Table 2K - Infrastructure Charges Reconciliation

	Line description	Water £m	Wastewater £m	Total £m
A	**Impact of infrastructure charge discounts**			
1	Infrastructure charges	9.107	10.858	19.965
2	Discounts applied to infrastructure charges	-	-	-
3	**Gross infrastructure charges**	9.107	10.858	19.965
B	**Comparison of revenue and costs**			
4	Variance brought forward			-
5	Revenue	9.107	10.858	19.965
6	Costs	(20.144)	(6.487)	(26.631)
7	Variance carried forward	(11.037)	4.371	(6.666)

1 For the financial year 2018/19 total network infrastructure reinforcement costs were £26.6 million which is £6.7 million higher than the corresponding revenues of £20.0 million. Within this, water costs were £11.0 million higher than the equivalent revenues whilst wastewater costs were £4.4 million lower.

2 Over a rolling five year period we expect to fully recover the costs of network infrastructure reinforcement from developers. However, owing to the the long-term nature of these infrastructure schemes, the uneven profile of network reinforcement spend over an AMP period and the fact that we aim to recover these infrastructure costs over a five year period, we would not expect the costs and revenues to match in any given financial year. This is borne out in the costs and revenues seen in 2018/19.

3 Our region is currently experiencing a significant uplift in the level of new development, much of which is in the early stages. This is driving significant new infrastructure reinforcement needs resulting in the high levels of infrastructure reinforcement spend seen in 2018/19.

4 Additionally, the charges scheme has been designed to maintain the pre-existing balance between developers and customers and the timing of expenditure is such that it is often out of sync with the collection of revenues, with expenditure being on the more linear basis of plots connected.

5 We therefore believe the differences in expenditure and revenue seen in 2018/19 to be temporary in nature and would expect this gap to narrow over time, particularly as the new development activity reaches maturity and all network reinforcement expenditure incurred to enable this growth is recovered from developers.

6 No discounts have been applied to infrastructure charges in 2018/19, a position which we'll continue to review as the charging regime matures.

Table 3A - Outcome Performance

#	Unique ID	Performance commitment	Unit	2018-19 performance level - actual	2018-19 CPL met?	2018-19 outperformance payment or underperformance payment - in-period ODIs (indicator)	2018-19 outperformance payment or underperformance payment - in-period ODIs (£m, to 4 dp)	2018-19 outperformance payment or underperformance payment - ODIs payable at the end of AMP6 (indicator)	2018-19 outperformance payment or underperformance payment - ODIs payable at the end of AMP6 (£m, to 4 dp)	31 March 2020 forecast - total AMP6 outperformance payment or underperformance penalty (indicator)	31 March 2020 forecast - total AMP6 outperformance payment or underperformance penalty (£m, to 4 dp)
1	PR14ANHWSW_W-A2	W-A2: Water supply interruptions	time	8.73	Yes	-	-	Outperformance payment	5.6720	Outperformance payment	20.6430
2	PR14ANHWSW_W-A3	W-A3: Properties at risk of persistent low pressure	nr	287	-	-	-	-	-	Outperformance payment	6.0000
3	PR14ANHWSW_W-A4	W-A4: Water quality contacts	nr	1.18	Yes	-	-	Outperformance payment	0.0589	Outperformance payment	0.0589
4	PR14ANHWSW_W-B1	W-B1: Value for money perception - variation from baseline against WaSCs (water)	%	1	Yes	-	-	Outperformance payment	0.0250	Outperformance payment	0.3000
5	PR14ANHWSW_W-C1	W-C1: Percentage of population supplied by single supply system	%	44.9	-	-	-	-	-	-	-
6	PR14ANHWSW_W-C2	W-C2: Frequency of service level restrictions (hosepipe bans)	nr	1	-	-	-	-	-	-	-
7	PR14ANHWSW_W-D1	W-D1: Security of Supply Index (SoSI) - dry year annual average	score	100	-	-	-	-	-	-	-
8	PR14ANHWSW_W-D2	W-D2: Security of Supply Index (SoSI) - critical period (peak) demand	score	100	-	-	-	-	-	-	-
9	PR14ANHWSW_W-D3	W-D3: Per property consumption (PPC) (litres/household/day reduction)	nr	-11	-	-	-	-	-	Underperformance payment	-7.7700
10	PR14ANHWSW_W-D4	W-D4: Leakage - three-year average	nr	186	Yes	Outperformance payment	3.0900	-	-	Outperformance payment	14.4200
11	PR14ANHWSW_W-E1	W-E1: Percentage of SSSIs (by area) with favourable status	%	99	-	-	-	-	-	-	-

#	Unique ID	Performance commitment	Unit	2018-19 performance level - actual	2018-19 CPL met?	2018-19 outperformance payment or underperformance payment - in-period ODIs (indicator)	2018-19 outperformance payment or underperformance payment - in-period ODIs (£m, to 4 dp)	2018-19 outperformance payment or underperformance payment - ODIs payable at the end of AMP6 (indicator)	2018-19 outperformance payment or underperformance payment - ODIs payable at the end of AMP6 (£m, to 4 dp)	31 March 2020 forecast - total AMP6 outperformance payment or underperformance penalty (indicator)	31 March 2020 forecast - total AMP6 outperformance payment or underperformance penalty (£m, to 4 dp)
12	PR14ANHWSW_W-E2	W-E2: Environmental compliance (water)	nr	5	-	-	-	-	-	-	-
13	PR14ANHWSW_W-F1	W-F1: Operational carbon (% reduction from 2015 baseline)	%	29	-	-	-	-	-	-	-
14	PR14ANHWSW_W-F2	W-F2: Embodied carbon (% reduction from 2010 baseline)	%	58	-	-	-	-	-	-	-
15	PR14ANHWSW_W-G1	W-G1: Survey of community perception	%	57	-	-	-	-	-	-	-
16	PR14ANHWSW_W-H1	W-H1: Water infrastructure	category	Green	Yes	-	-	-	-	Underperformance payment	-0.5580
17	PR14ANHWSW_W-H2	W-H2: Water non-infrastructure	category	Green	Yes	-	-	-	-	-	-
18	PR14ANHWSW_W-I1	W-I1: Mean zonal compliance (MZC)	%	99.95	No	-	-	Underperformance payment deadband	-	Underperformance payment deadband	-
19	PR14ANHWSWW_S-A2	S-A2: Properties flooded internally from sewers - three-year average (reduction)	nr	133	-	-	-	-	-	Outperformance payment	8.6400
20	PR14ANHWSWW_S-A3	S-A3: Properties flooded externally from sewers - three-year average (reduction)	nr	2033	-	-	-	-	-	-	-
21	PR14ANHWSWW_S-A4	S-A4: Percentage of sewerage capacity schemes incorporating sustainable solutions	%	41	-	-	-	-	-	-	-
22	PR14ANHWSWW_S-B1	S-B1: Value for money perception variation from baseline against WaSCs (wastewater)	%	1	Yes	-	-	Outperformance payment	0.0250	Outperformance payment	0.2750

#	Unique ID	Performance commitment	Unit	2018-19 performance level - actual	2018-19 CPL met?	2018-19 outperformance payment or underperformance payment - in-period ODIs (indicator)	2018-19 outperformance payment or underperformance payment - in-period ODIs (£m, to 4 dp)	2018-19 outperformance payment or underperformance payment - ODIs payable at the end of AMP6 (indicator)	2018-19 outperformance payment or underperformance payment - ODIs payable at the end of AMP6 (£m, to 4 dp)	31 March 2020 forecast - total AMP6 outperformance payment or underperformance penalty (indicator)	31 March 2020 forecast - total AMP6 outperformance payment or underperformance penalty (£m, to 4 dp)
23	PR14ANHWSWW_S-C1	S-C1: Percentage of bathing waters attaining excellent status	%	65	-	-	-	-	-	-	-
24	PR14ANHWSWW_S-C2	S-C2: Percentage of SSSIs (by area) with favourable status	%	99	-	-	-	-	-	-	-
25	PR14ANHWSWW_S-C3	S-C3: Pollution incidents (category 3)	nr	185	Yes	-	-	Outperformance payment	3.2205	Outperformance payment	14.4210
26	PR14ANHWSWW_S-C4	S-C4: Environmental compliance (wastewater)	nr	39	-	-	-	-	-	-	-
27	PR14ANHWSWW_S-D1	S-D1: Operational carbon (% reduction from 2015 baseline)	%	29	-	-	-	-	-	-	-
28	PR14ANHWSWW_S-D2	S-D2: Embodied carbon (% reduction from 2010 baseline)	%	58	-	-	-	-	-	-	-
29	PR14ANHWSWW_S-E1	S-E1: Survey of community perception	%	57	-	-	-	-	-	-	-
30	PR14ANHWSWW_S-F1	S-F1: Sewerage infrastructure	category	Green	Yes	-	-	-	-	-	-
31	PR14ANHWSWW_S-F2	S-F2: Sewerage non-infrastructure	category	Green	Yes	-	-	-	-	-	-
32	PR14ANHHHR_R-A1	R-A1: Qualitative service incentive mechanism (SIM) score	text	1st among the 10 WaSCs	Yes	-	-	-	-	-	-
33	PR14ANHHHR_R-A2	R-A2: Service incentive mechanism (SIM)	score	90	-	-	-	-	-	-	-
34	PR14ANHHHR_R-A3	R-A3: Customer Satisfaction Index prepared by UK Institute of Customer Service	rank	14/28	-	-	-	-	-	-	-
35	PR14ANHHHR_R-B1	R-B1: Fairness of bills perception - variation from baseline against WaSCs	%	2	Yes	-	-	Outperformance payment	0.0500	Outperformance payment	0.4750

#	Unique ID	Performance commitment	Unit	2018-19 performance level - actual	2018-19 CPL met?	2018-19 outperformance payment or underperformance payment - in-period ODIs (indicator)	2018-19 outperformance payment or underperformance payment - in-period ODIs (£m, to 4 dp)	2018-19 outperformance payment or underperformance payment - ODIs payable at the end of AMP6 (indicator)	2018-19 outperformance payment or underperformance payment - ODIs payable at the end of AMP6 (£m, to 4 dp)	31 March 2020 forecast - total AMP6 outperformance payment or underperformance penalty (indicator)	31 March 2020 forecast - total AMP6 outperformance payment or underperformance penalty (£m, to 4 dp)
36	PR14ANHHHR_R-B2	R-B2: Affordability perception - variation from baseline against WaSCs	%	2	Yes	-	-	Outperformance payment	0.0500	Outperformance payment	0.5500
37	PR14ANHHHR_R-C1	R-C1: Operational carbon (% reduction from 2015 baseline)	%	29	-	-	-	-	-	-	-
38	PR14ANHHHR_R-C2	R-C2: Embodied carbon (% reduction from 2010 baseline)	%	58	-	-	-	-	-	-	-
39	PR14ANHHHR_R-D1	R-D1: Survey of community perception	%	57	-	-	-	-	-	-	-

1 Table 3A shows how we have performed against our Outcome Delivery Incentive (ODIs) in 2018/19 and, where applicable, how this compares with the agreed Performance Commitment Levels (PCL). We do not have a 2018/19 PCL for every ODI. Where this is the case we have shown a blank in the column "2018/19 PCL met?".

2 We update our Customer Engagement Forum (CEF) on current performance at every meeting. The information reported in Table 3A is consistent with the reports on ODI performance we made to our CEF during the year and after year end.

3 Table 3A shows that we have earned rewards for performance in eight ODIs: leakage, supply interruptions, water quality contacts, pollution incidents and the four customer perception ODIs. We incurred no penalties. In Table 3A (and in the commentary below) these rewards are stated in 2012/13 prices, to be consistent with our PR14 Final Determination and comply with Ofwat's guidance. In the table below we have also inflated these figures at year average RPI to 2018/19 figures to make them more relevant to stakeholders.

4 With the exception of our leakage ODI, where we will claim any reward or penalty in-period (i.e. before 2020), the reward for all ODIs will be claimed at the end of the regulatory period (i.e. after 2020).

	Rewards/penalties from 2018/19 ODI performance (£m)	
	2012/13 Prices	2018/19 prices
Interruptions to supply	5.7	6.6
Leakage	3.1	3.6
Water quality contacts	0.1	0.1
Pollution incidents	3.2	3.7
Value for money perception - water	0.0	0.0
Value for money perception - water recycling	0.0	0.0
Fairness of bills perception	0.1	0.1
Affordability perception	0.1	0.1
TOTAL	**12.2**	**14.1**

5 In 3A we have also included our best estimates of our total AMP6 rewards and penalties. However, we note that uncertainties affect our final outturns for all ODIs.

6 Further commentary on progress against our ODIs is included in our Annual Integrated Report. Detail about all our ODIs is also available on our website at http://ourperformance.anglianwater.co.uk/

Water supply interruptions (3A.1)

7 The total time lost due to interruptions greater than 3 hours per property was 8 minutes 44 seconds (7 minutes 24 seconds in 2017/18). This performance beats our PCL of 12 minutes and attracts an outperformance payment for the year of £5.7 million.

8 While there were no changes to process or methodologies during 2018/19, the hot, dry summer caused significant challenges to water supply because of high numbers of burst mains and exceptional levels of demand. Our incident room opened in response to the warm weather and remained in operation for the majority of the hot spell from late June to early August. Our score during the warm weather spell was 3 minutes and 15 seconds. Two of the largest scoring events for the year followed shortly after in September: Weston Underwood (34 seconds) and Monks Way, Milton Keynes (17 seconds).

9 Our forecast performance for 2019/20 is 11 minutes, which would give us a total outperformance payment for the price control period of £20.6 million.

Properties at risk of persistent low pressure (3A.2)

10 The number of reportable properties on the register at year end is 287, compared with 297 at the end of 2017/18. There was no PCL for this ODI for 2018/19. During the year there were 91 additions to the register and 101 removals.

11 Of the 287 properties below the reference level on 31 March 2019, 15 were reportable due to common services and 38 are included under Section 65 of the 1991 Water Industry Act where a property receives pressure below the reference level due to its height in relation to the storage point.

12 Of the 101 removals in 2018/19, 73 were removed following a capital intervention and 28 following operational improvements such as service pipe replacement or rezoning. We are on track to meet our PCL of 257 in 2019/20.

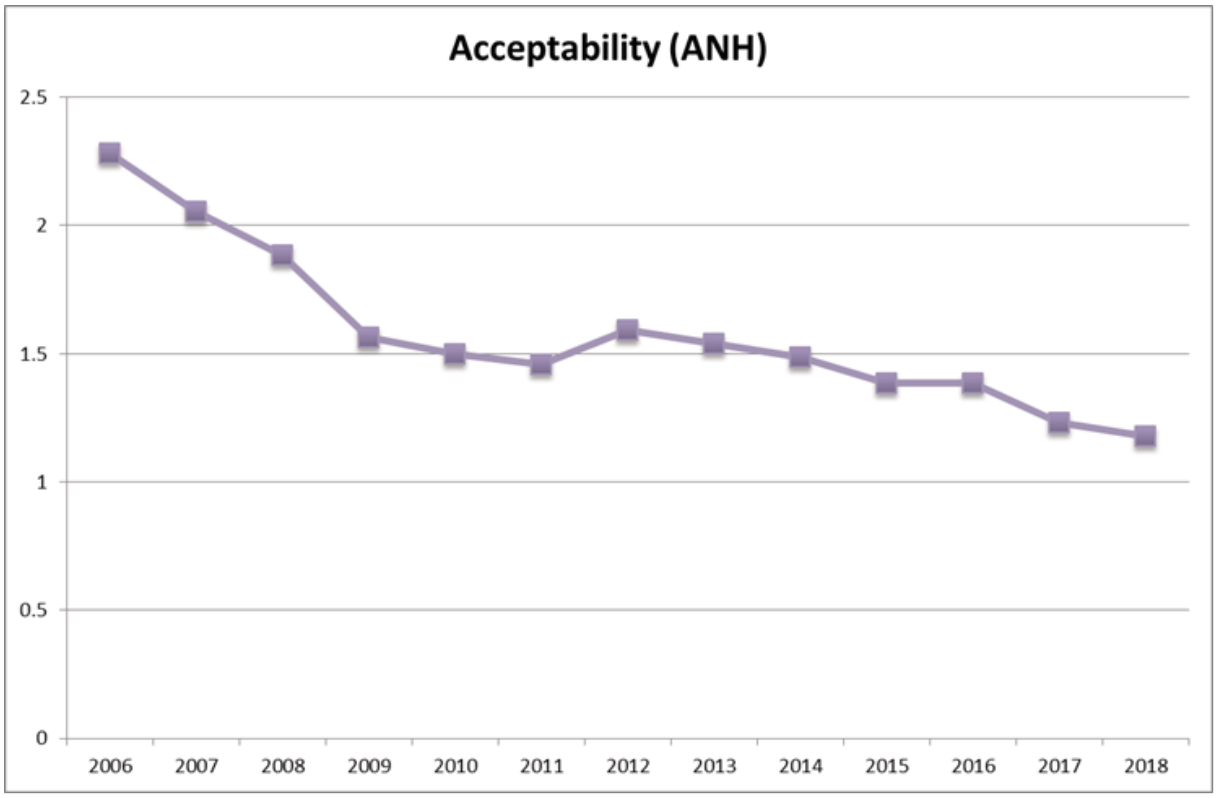
13 Six capital schemes to improve pressures have realised benefits in 2018/19:

- Marston Moretaine – 28 properties were added and removed. The solution of upsizing the Pressure Reduction Valve and meter complex was delivered as part of the Housing and Estate Mains parcel. Due to unknown anomalies in the network, growth had an earlier impact in the network than anticipated.
- North Crawley, Newport Pagnell – 14 properties were removed through relaying a section of water main. Valving and metering were changed to reduce the leakage levels, reducing demand headloss and improving pressures.
- Ashwicken – 14 properties were removed though installation of a water booster to supply the District Metered Area.
- Halse – 11 properties were removed through transfer of 11 properties on to a higher pressure main.
- St. Edmunds Road, Ipswich – three properties were removed by transferring services from gravity main to pumped system.
- Stradishall Road, Hundon – three properties were removed. The properties were rezoned onto a higher pressure area and a small length of main was laid to avoid water quality issues.

14 We forecast that by 31 March 2020 the number of properties on our low pressure register will be 150, which will attract an outperformance payment for the period of £6.0m.

Water quality contacts (3A.3)

15 The number of acceptability contacts received in 2018 was 1.18 per 1,000 population served. This is our lowest rate ever recorded, with a significant improvement on the 2017 figure of 1.23 per 1,000 population. This performance beats our PCL of 1.23 and attracts an outperformance payment for the year of £0.06 million.



16 Our approach to improving the acceptability rate continues through our 'Keep Water Healthy' initiative that has now been running for over five years. This campaign aims to provide customers with information and advice to help prevent water quality problems arising from their own internal plumbing. We continue to engage our customers with this through multiple platforms, including social media. We have additionally seen a steady increase in website hits on our drinking water quality web pages.

17 We continue to review and develop our strategy of identifying emerging issues at the very early stages by spotting clusters of customer contacts. This allows us to both minimise any further impacts and, where necessary, proactively notify other affected customers.

18 For 2019/20 we forecast hitting our PCL of 1.23, which would give us a total outperformance payment for the price control period of £0.06 million.

Value for money perception - variation from baseline against WaSCs (Water) (3A.4)

19 In the Consumer Council for Water (CCWater) 2018 survey, 72 per cent of our customers said that they thought their water bills were good value for money, which is a decrease compared to 79 per cent in 2017. This is the same as the average scored by other WASCs. Compared to the ODI baseline, which is 1 per cent below average (based on 2011 and 2012 scores), we have improved our score by 1 per cent.

Percentage of population supplied by a single supply system (3A.5)

20 The ODI for supply demand resilience is 'Percentage of Population on Single Water Supplies', defined as the proportion of household customers exposed to the risk of loss of supply due to a resilience type event. This includes works failures in multiple source systems which result in the loss of supply to some customers.

21 The approach taken to develop the water supply resilience ODI was to identify the resulting deficit if each water treatment works was taken out of service for a prolonged period. The deficit was converted to an equivalent number of household customers and the percentage of population at risk calculated. The risk to the whole region was summed to form the supply demand resilience ODI.

22 The baseline ODI figure derived for PR14, 27.5 per cent, was based on an early modelling set. It did not include the following:

- The Hartlepool Water system
- Treatment works where resilience schemes had been initiated in AMP5 for completion in AMP6 (e.g. the major Grafham WTW scheme)
- Resilience schemes which have previously been rejected by Ofwat (e.g. Newton WTW)
- Schemes with resilience benefits being delivered in other programmes (e.g. Great Wratting).

23 To show a more accurate representation of resilience for the whole company, we undertook additional modelling during 2014/15 to include all treatment works that could have a resilience impact. This produced a revised AMP6 baseline for the ODI of 46.9 per cent. Therefore it shows the 'pre-position' for treatment works such as Grafham where resilience schemes are still under construction.

24 The table below shows our progress during AMP6 against this revised baseline. During 2018/19 four resilience schemes were completed, providing a 0.43 per cent reduction. The outturn ODI for the year 2018/19 becomes 44.9 per cent.

ODI % Population on Single Water Supply

Year	Schemes Delivered	% Population on Single Water Supply reduction from delivered schemes	ODI % Population on Single Water Supply
Baseline			46.9
2015/16	Caistor WTW	0.63	46.3
2016/17	No schemes delivered	0.00	46.3
2017/18	Driby WTW	0.21	46.1
2017/18	Twelve Acre Wood WTW	0.73	45.3
2018/19	Stanton (Ixworth) WTW	0.16	45.1
2018/19	Semer WTW	0.11	45.0
2018/19	Wighton WTW	0.07	45.0
2018/19	Foulsham WTW, Salle WTW	0.09	44.9

25 We forecast to meet the Performance Commitment Level of 24.7 per cent by 2020 through delivery of a number of schemes and to avoid any underperformance payment for the price control period.

Frequency of service level restrictions (hosepipe bans) (3A.6)

26 There have been no restrictions on the use of sprinklers or unattended hosepipes in 2018/19. Our ODI measures the number of restrictions in a rolling ten year period. The figure for this line is 1, as there was a hosepipe ban in our region in 2012/13.

Security of Supply Index (SoSI) - dry year annual average (DYAA) (3A.7)

27 The inputs are calculated as follows:

- Water Available For Use (WAFU): this is calculated based on updated DO figures minus outage. DO includes significant inter-Resource Zone transfers, which vary slightly from year to year. There are no changes to the core (pre-transfer) DO values this year.
- Outage has been updated to reflect the new methodology adopted in the 2019 Water Resources Management Plan (WRMP); it is calculated as a percentage of in-year DO, based on the percentage of DO in the first full forecast year of 2019 WRMP.
- Bulk imports and exports: these are fixed (at capacity) as per agreements with neighbouring companies.
- Dry year Distribution Input (DI): this is the reporting year DI uplifted by dry year uplift factor. The dry year factor for 2018/19 is 1 i.e. no uplift, because the consumption modelling shows that 2018/19 is almost identical to the reference dry year (1995/96); in future 2018/19 will be adopted as the reference dry year.
- Reporting year distribution input: this is post-MLE DI at the Resource Zone (RZ) level.
- Target headroom: this is calculated as a percentage of in-year DI, based on the percentage of "base year" DI in the 2015 WRMP.
- Zonal population: this has been aligned with Yearbook totals at the RZ level.

The Zonal index is zero for all RZs in 2018/19 and therefore the company SOSI is 100. This is our PCL for 2019/20 and we forecast to meet it.

Security Of Supply Index (SoSI) - critical period (peak) demand (3A.8)

28 The inputs are calculated as follows:

- WAFU: critical period Deployable Output (DO) is based on updated DO figures minus outage. DO includes significant inter-RZ transfers, which vary slightly from year to year. There are no changes to the core (pre-transfer) DO values this year. Outage is as for DYAA, but with the peaking factor (PF) applied.
- Bulk imports and exports: these are fixed (at capacity) as per agreements with neighbouring companies.
- Dry year distribution input: as DYAA, but with PF applied.
- Reporting year distribution input: as DYAA, but with PF applied.
- Target headroom: as DYAA, but with PF applied.
- Zonal population: As for DYAA.

29 The peaking factor has been updated to reflect the hot, dry conditions of June to July 2018. Analysis shows that the peak was similar to that experienced in July 2006. In future, the early July 2018 peak will be adopted as the reference peak period.

30 The zonal index is zero for all RZs in 2018/19 and therefore the company SOSI is 100. This is our PCL for 2019/20 and we forecast to meet it.

Per property consumption (3A.9)

31 Per household consumption (PHC) increased in 2018/19 from 315.9 to 323.0 litres/property/day, a variance of 11 from our AMP6 baseline of 312.0 litres/property/day. The rise reflects the significant increase in customer demand over the hot, dry summer. We are actively implementing initiatives to reduce customer demand, including

- Encouraging customers to switch to metered billing
- Our water efficiency programme, and
- Pressure management.

32 Our smart metering trial in Newmarket points to higher than anticipated internal plumbing losses caused by leaking toilets with drop valves. This has provided us with further evidence to support our smart metering programme in AMP7, which will help us to pinpoint such plumbing losses.

33 Per Household Consumption is highly dependent on the weather, which makes forecasting 2019/20 performance difficult. In view of the gap between our outturn and PCL in 2018/19 we have forecast making no reduction on our AMP6 baseline of 312 l/prop/d in 2019/20. This would cause us to incur an underperformance payment of £7.8m.

Leakage - three year average (3A.10)

34 Leakage for 2018/19 is assessed at 191.24 Ml/d. This represents a 9 Ml/d increase from 2017/18. Three year rolling leakage is assessed at 186 Ml/d which beats our Performance Commitment Level of 192 Ml/d and attracts an outperformance payment of £3.1 million.

35 This year we have seen extremes of weather impacting network performance. At the start of the year performance was impacted by the recovery from the 'Beast from the East'. This was rapidly followed by the long hot and dry summer which caused high soil moisture deficits and ground movement. Both these events stressed the network and caused elevated burst events on our infrastructure and customer supply pipes, leading to increased leakage levels. We also saw significantly elevated demand and night use for the summer period from the end of June to the start of August.

36 In August 2018 we formed a high level steering group with the remit of developing an 18 month plan to ensure that actions were in place to continue our leakage reduction through the AMP, with the continued aim of reaching a level of 172 Ml/d by the end of year 5 AMP6. The plan included:

- Increasing the number of detection technicians from 138 people to 203
- Increasing the number of leakage analysts from 41 to 56
- Increasing the number of network technicians from 142 to 151
- Increasing the number of repair teams from 89 to 102, and
- Bringing forward investment to deploy 3,500 fixed noise loggers from AMP7 to allow 12 per cent of the network to be covered by the end of AMP6.

37 We have maintained the existing strands of our Leakage Strategy this year:

- Network/pump optimisation schemes - There have been 26 optimisation schemes implemented this year, delivering 2.73 Ml/d of leakage reduction
- Intensive Leakage Programme (the "172 process") - this process has now reviewed 796 District Meter Areas, resulting in leakage reduction of 4.85 Ml/d.

38 We remain committed to our downward glide path towards meeting our ambitious goals for leakage reduction. Our forecast out-turn for 2019/20 is 177 Ml/d, which would give 184 Ml/d as a three year average. This would lead to a total outperformance payment for the price control period of £14.9 million.

Sites Of Specific Scientific Interest (SSSIs) (3A.11 and 3A.24)

39 Natural England (NE) assesses the condition of our Sites of Special Scientific Interest (SSSIs), which we have a legal duty to maintain and enhance. Currently 99.94 per cent of our SSSIs (by area) are in either 'favourable' (98.818 per cent) or 'unfavourable recovering' (1.119 per cent) condition. There are some small sites where we own a small portion of the overall area that are in 'unfavourable no change' (0.032 per cent) or 'unfavourable declining' condition (0.031 per cent).

40 Natural England downgraded a third party site from being 'favourable' to 'unfavourable no change'. We own 0.01ha of this 159.93ha SSSI.

41 We undertook a mapping exercise to compare our land registry data with Natural England's SSSI data. As a result, a further 0.63ha was added to the our SSSI land holding. This is included in the condition statistics above.

42 No sites that we are responsible for are classified as 'part destroyed' or 'destroyed'.

Environmental compliance (water) (3A.12)

43 In 2018/19 we delivered one obligation which counts towards this performance commitment measure. This was an Eels Regulations scheme at Heigham, Norwich. Whilst construction is complete at Covenham, it will not be reported until additional work agreed with the Environment Agency (EA) has been completed to resolve a defect; this is expected in December 2019.

44 In the first three years of AMP6, we completed Eels Regulations schemes at Tetney Weir, Cloves Bridge, Ardleigh and Cadney. Completion of the Heigham scheme brings our total number of obligations delivered to five.

45 The EA has confirmed a derogation for Marham abstraction point, which means that the obligation at this location is no longer required.

46 We forecast to deliver all of the obligations required under this ODI by the end of 2019/20 and avoid any underperformance penalty.

Operational carbon (3A.13, 3A.27 and 3A.37)

47 For operational carbon we are certified to CEMARS GOLD (ISO-14064), with 10 years of continuous carbon reduction against this standard.

48 Operational carbon emissions for 2018/19 have been calculated using the UKWIR Carbon Accounting Methodology, which complies with Defra guidelines. For 2018/19 we have used version 13 of the UKWIR greenhouse gas (GHG) workbook which includes the latest Defra guidelines on GHG conversion factors (2013).

49 Gross operational GHG emissions for the report year have reduced against the 2014/15 baseline by 29 per cent from 455,335 t/CO2e to 322,201 t/CO2e.

50 The main external factors impacting emissions in 2018/19 from the baseline year are a reduction in grid electricity emission factor of 43 per cent and a change in global warming potential for methane and nitrous oxide, which increases the process emissions by 8 per cent.

51 Electricity consumption increased compared to 2017/18 due to the increased demand for water during the summer heat wave. In 2018/19 our energy efficiency initiative delivered a positive contribution, with 11.24GWh (full year effect) of energy savings, mitigating 3,453 t/CO2e. The self-generation of renewable power has also continued to increase.

52 There is no PCL for this measure in 2018/19. Our PCL for 2019/20 is a reduction of 7 per cent and we forecast meeting it.

Embodied carbon (3A.14, 3A.28 and 3A.38)

53 We achieved a 58 per cent reduction in capital carbon against our 2010 baseline.

54 There is no PCL for this measure in 2018/19. Our PCL for 2019/20 is a reduction of 60 per cent and we forecast meeting it.

Survey of community perception (3A.15, 3A.29 and 3A.39)

55 An independent survey of customers is used to provide data for the ODI, which is a reputational measure. In previous years we commissioned Allto to carry out a quantitative survey specifically to measure community perception. For 2018/19 we decided to include

the relevant question in quantitative surveys that we were already carrying out for other purposes. The question itself, and the context in which we asked it, was unchanged from the previous survey.

56 Performance is assessed on the percentage of customers in the survey who 'agree strongly' or 'agree slightly' in response to the question: 'to what extent do you agree that Anglian Water cares about the communities it serves?' The first year's results were used to set a baseline at 56 per cent.

57 For 2018/19 we asked the question within two surveys:

- Accent carried out our acceptability research for PR19 and their research gained a result of 57 per cent. This survey covered 1,600 household customers.
- Blue Babel carried out our brand tracker research and their research also gained a result of 57 per cent. This survey covered 500 household customers.

58 There is no PCL for this measure in 2018/19.

Serviceability - water infrastructure (3A.16)

59 In 2018/19 three of our water infrastructure indicators are assessed as Green. The 'unplanned interruptions over 12 hours' indicator was above the upper control limit and therefore is assessed as Amber. Under the mechanism of our serviceability assessment this means that the overall assessment for the water infrastructure sub-service remains Green.

60 Further detail of our performance against the four water infrastructure sub-measures is set out in Table 3B.

Serviceability - water non-infrastructure (3A.17)

61 In 2018/19 all three of our water non-infrastructure indicators are assessed as Green because all are within their upper control limits. Under the mechanism of our serviceability assessment this means that the overall assessment for the water non-infrastructure sub-service remains Green.

62 Further detail of our performance against the three water non-infrastructure sub-measures is set out in Table 3B.

Mean zonal compliance (3A.18)

63 Overall Mean Zonal Compliance (MZC) for 2018 was 99.95 per cent, which was slightly lower than the figure for 2017. This score is below our PCL of 100 but within the underperformance deadband so no underperformance penalty is payable. This index was impacted by 45 exceedances in the Anglian region, comprising 18 odour, 11 iron, seven nickel, four lead, two taste, two metaldehyde and one enterococci exceedance. In the Hartlepool region, a single enterococci detection impacted MZC for 2018.

Properties flooded internally from sewers – three year average (reduction) (3A.19)

64 This ODI measures the change from our 2014/15 baseline. Both baseline and report year figures are shown as three year averages to smooth out the impact of exceptional years. We count floodings due to both overloaded sewers and other causes and include incidents attributable to severe weather. In 2018/19 there were 342 properties reported, compared to 475 in 2014/15, which is a reduction of 133 properties.

65 No PCL is set for this measure in 2018/19. We forecast meeting our PCL (a reduction of 27 on our 2014/15 baseline) in 2019/20 and earning an outperformance payment of £8.6m.

Properties flooded externally from sewers – three year average (reduction) (3A.20)

66 This ODI measures the change from our 2014/15 baseline. Both baseline and report year figures are shown as three year averages to smooth out the impact of exceptional years. We count floodings due to both overloaded sewers and other causes and include incidents attributable to severe weather. In 2018/19 there were 4,148 areas reported, compared to 6,181 reported in 2014/15 which is a reduction of 2,033 areas.

67 No PCL is set for this measure in 2018/19. We forecast meeting our PCL (a reduction of 22 on our 2014/15 baseline) in 2019/20 and avoiding an underperformance payment.

Percentage of sewerage capacity schemes incorporating sustainable solutions (3A.21)

68 We have completed ten sewerage capacity schemes within the qualifying business cases during 2018/19. Two of these included significant elements of sustainable solutions. Over the four years to date of the price control period this gives us a total of 23 schemes with elements of sustainable solutions out of a total of 56 schemes completed. This translates into 41 per cent for the performance commitment measure compared to a 2019/20 PCL of 25 per cent. We forecast to meet this.

Value for money perception - variation from baseline against WaSCs (Wastewater) (3A.22)

69 In CCWater's 2018 survey, 74 per cent of our customers said that they thought their sewerage bills were good value for money, which is an decrease compared to 78 per cent in 2017. This is 1 per cent below the average scored by the other WaSCs. Compared to the ODI baseline, which is 2 per cent below average (based on 2011 and 2012 scores), we show an improvement of 1 per cent.

Percentage of bathing waters attaining 'Excellent' status (3A.23)

70 The number of bathing waters in our region attaining 'Excellent' status at the end of the 2018 bathing water season was 32. This is 65.3 per cent of the 49 bathing waters in our region.

71 The number of 'Excellent' bathing waters increased to 32 (31 in 2017). Cleethorpes and Southend Three Shells improved to 'Excellent', Southwold The Pier declined to 'Good'.

72 The number of bathing waters assessed as 'Good' dropped in 2018 from 12 to 9 (18.4 per cent). Cleethorpes and Southend Three Shells improved to 'Excellent', Southend Chalkwell and Wells declined to 'Sufficient' and Southwold The Pier dropped to 'Good' from 'Excellent'.

73 We think the failures which caused the demotions due to two algal breakdown events. We are working with external stakeholders to try and prevent these natural source occurrences impacting the bathing waters in future.

74 The number of 'Sufficient' bathing waters increased in 2018 from 5 to 6 (12.2 per cent). Wells and Southend Chalkwell declined to 'Sufficient' and Leigh Bell Wharf, which was 'Sufficient' in 2017, declined to 'Poor'.

75 The cause of the decline in quality at all 'Sufficient' bathing waters are being investigated by Anglian Water, local authorities and the Environment Agency to try and locate the sources of bacterial pollution.

76 The number of 'Poor' bathing waters increased by one in 2018 (Leigh Bell Wharf) to two (4.1 per cent):

- Clacton Groyne 41 remains 'Poor' as it was in 2017. Anglian Water, Tendring District Council and the Environment Agency have been working for over 15 years to try and locate the bacterial pollution sources. These have not been confirmed as yet, however

it looks to be a combination of private sewerage and bird populations roosting on the pier.

- Leigh Bell Wharf declined to 'Poor' in 2018. Anglian Water, Southend Borough Council and the Environment Agency are working together to try to locate the bacterial pollution sources here. The risks look to be a combination of factors including misconnections, sediment suspension, private discharges and dog fouling.

77 The full results for all 49 bathing waters in our region is shown below.

Bathing Waters	**Classification**
Cleethorpes	Excellent
Humberston Fitties	Excellent
Mablethorpe Town	Excellent
Sutton-on-Sea	Excellent
Moggs Eye	Excellent
Anderby	Excellent
Chapel St Leonards	Excellent
Ingoldmells South	Excellent
Skegness	Excellent
Heacham	Sufficient
Hunstanton Main Beach	Sufficient
Hunstanton (Old Hunstanton)	Good
Wells	Sufficient
Sheringham	Excellent
West Runton	Excellent
East Runton	Excellent
Cromer	Excellent
Mundesley	Excellent
Sea Palling	Excellent
Hemsby	Excellent
Caister Point	Excellent
Great Yarmouth North	Excellent
Great Yarmouth Pier	Excellent
Great Yarmouth South	Excellent
Gorleston Beach	Excellent
Lowestoft (North of Claremont Pier)	Good
Lowestoft (South of Claremont Pier)	Good
Southwold The Pier	Good
Southwold The Denes	Sufficient
Felixstowe North	Excellent
Felixstowe South	Excellent
Dovercourt	Excellent
Walton	Good
Frinton	Good
Holland	Excellent

Bathing Waters	Classification
Clacton	Excellent
Clacton (Groyne 41)	Poor
Jaywick	Good
Clacton Beach Martello Tower	Good
Brightlingsea	Excellent
West Mersea	Sufficient
Shoebury East	Excellent
Shoeburyness	Excellent
Southend Thorpe Bay	Excellent
Southend Jubilee	Good
Southend Three Shells	Excellent
Southend Westcliff Bay	Excellent
Southend Chalkwell	Sufficient
Leigh Bell Wharf	Poor

78 There is no PCL for this measure in 2018/19. Our PCL for 2019/20 is for 67 per cent of our bathing waters (33 number) to be rated 'Excellent'.

79 Forecasting bathing water performance is very difficult given the unpredictable impact we can see from third party and natural point sources, diffuse pollution events and weather conditions. Our current best estimate is that we will achieve our PCL of 33 'Excellent' bathing waters. If so, there would be neither outperformance nor underperformance payments.

80 The 2019 bathing water season results will be published in November 2019.

81 Following the completion of our assurance process for this submission, we received Bathing Water results from samples taken during the heavy rainfall that fell in June. The effect of these samples may be to reduce our forecast of the number of excellent bathing waters. As the assurance process was complete before this information became available, the full impact of these new samples on bathing water assessments is not yet clear, and as the forecasts had been signed off internally, it was not appropriate to make amendments to the audited data. This note is to ensure that our stakeholders have the most up to date information available at the time of publication.

Pollution incidents (category 3) (3A.25)

82 The data for this line is based on the 2018 calendar year. For this measure we count incidents from all assets, including those that transferred to us in 2011 and 2016, whereas for our serviceability sub-measure (reported in Table 3B), we count only incidents from combined sewer overflows (CSOs), rising mains (RM) and foul sewers (FS) that we held pre-transfer. The table below sets out the numbers so the 3A and 3B reports can be reconciled.

83 The number of category 3 incidents decreased in 2018 to 185 (2017: 219). We believe this is reflective of the continued delivery of our pollution prevention strategy, public awareness of pollution incidents and the embedding of our Pollution Control Centre & Pollution App into business as usual processes for the handling of events in Water Recycling.

84 There were 185 Category 3 wastewater pollution incidents in 2018 - 183 from pre-transfer assets and two from transferred sewers. We met our PCL for this measure of 298 and earned an outperformance payment of £3.2 million.

Category 3	Excluding Transferred	Transferred	Total
CSO, RM, FS	81	2	83
Other Assets	102	0	102
Total	**183**	**2**	**185**

Environmental compliance (wastewater) (3A.26)

85 In 2018/19 we completed schemes which have delivered three obligations counting against this performance commitment measure. All three were at the Great Dunmow Water Recycling Centre, one under the Urban Wastewater Treatment Directive and two under the Water Framework Directive No Deterioration ND1 and ND2 drivers.

86 In the first three years of AMP6 we met 36 obligations, which brings our total number of obligations delivered now to 39. We forecast delivering all obligations under this measure by 31 March 2020, meeting our PCL and avoiding an underperformance penalty.

Serviceability - sewerage infrastructure (3A.30)

87 In 2018/19, all four of our sewerage infrastructure indicators were assessed as Green. This is because all four were within their upper control limits. Under the mechanism of our serviceability assessment this means that the overall assessment for the sewerage infrastructure sub-service remains Green.

88 Further detail of our performance against the four sewerage infrastructure sub-measures is set out in Table 3B.

Serviceability - sewerage non-infrastructure (3A.31)

89 Two sub-measures make up our sewerage non-infrastructure serviceability measure. In 2018 our indicator for 'STWs failing numeric standards' was assessed as Green and the 'population equivalent in breach of consents' indicator was above the upper control limit and therefore assessed as Amber. Under the mechanism of our serviceability assessment this means that the overall assessment for the sewerage non-infrastructure sub-service remains Green.

90 Further detail of our performance against the two sewerage non-infrastructure sub-measures is set out in Table 3B.

Qualitative Service Incentive Mechanism (SIM) (3A.32)

91 Based on the average of the four quarterly Ofwat surveys carried out in 2018/19 we achieved an annual satisfaction score of 4.61. This score was the leading in the industry and, as such, secured us first place in the qualitative league table. Our quarterly scores were:

Quarter 1 – 4.59

Quarter 2 – 4.56

Quarter 3 – 4.58

Quarter 4 – 4.69

92 We have changed the way we calculate the annual satisfaction score for 2018/19. As instructed by Ofwat, we have taken an un-rounded average of the four quarterly scores. In previous years we have used the weighted number reported to two decimal places that is produced by BMG, the consultant that carries out the qualitative survey on Ofwat's behalf.

Service Incentive Mechanism (SIM) (3A.33)

93 Our quantitative score this year has improved by two points, resulting in our strongest result since SIM reporting began. All elements of the quantitative measure were at least as good as our 2017/18 performance.

94 Our combined SIM score for 2018/19 is 90.0.

95 The 2018/19 score is the last year to count towards AMP6 SIM and, given our performance over the last four years, we expect to earn a financial reward. However, in accordance with RAG 4.08 we have not reported any earned or forecast financial reward or penalty from SIM in this table.

Unwanted telephone contacts

96 Unwanted telephone contacts received by third party companies working on our behalf, including debt collection agencies, have not been included as all agencies' calls are below 1% of our total calls received.

97 Due to the complexity of data recording we do not exclude calls about non-appointed activity. This is due to the difficulty in ensuring all call agents are fully aware of what constitutes a non-appointed activity. We continue to believe that the actual number of such contacts received would have a negligible impact on the overall reported numbers.

98 This report year we have continued our channels of proactive communication to our customers. SMS messaging and social media posts are regularly used for operational issues. Our proactive outbound communication team remain a key channel within billing. We also continue to use SMS messaging to remind customers when payments are due and where they may be eligible for a refund of any over payment.

99 This report year we have seen a 2 per cent reduction in our unwanted call numbers.

Total written complaints

100 This report year we have seen a reduction of 1 per cent in our written complaint numbers.

101 Whilst our highest numbers of complaints again this year relate to bills and debt recovery, we have received 74 fewer than last year. This is a result of improved first time resolution from our contact centre staff. The large areas of complaint reduction relate to debt policies and data sharing.

Total complaints escalated to second stage

102 We have had a 5 per cent reduction in repeat, second stage complaints this year, with 150 received.

103 We continue to strive towards first time resolution and proactive positive contact for every complaint received. We also continue to use SMS messaging where we have not been able to speak to the customer. This helps us to identify and address any further queries the customer may have.

CCWater complaints

104 No complaints this report year have prompted an investigation by the Consumer Council for Water.

Customer Satisfaction Index score prepared by UK Institute Of Customer Service (3A.34)

105 The UK Customer Satisfaction Index (UK CSI) score is a national measure of customer satisfaction. It is based on a six-monthly online survey of consumers who are intended to be demographically representative of the UK population.

106 For 2018/19 we scored 75.85 on the UK CSI, which ranked us 14th out of the 28 utility companies included in the measure. This outperformed the average utility sector score of 74.1. The utility companies included in each survey varies. For this reason we are using the average of the July 18 and January 19 survey scores to determine our score. The position is based on the average score of those companies that featured in both July and January surveys.

107 There is no PCL for this measure in 2018/19. Our PCL for 2019/20 is to be in the top quartile of utility companies.

Fairness of bills perception (3A.35)

108 In CCWater's 2018 survey, 62 per cent of our customers said that they thought their bills were fair, which is a 5 per cent decrease compared to 67 per cent in 2017. This is 1 per cent below the average scores for other WaSCs, who scored an average of 63 per cent for the year. Compared to the ODI baseline, which is 3 per cent below average (based on 2011 and 2012 scores), we have shown an improvement of 2 per cent.

Affordability perception (3A.36)

109 In CCWater's 2018 survey, 74 per cent of our customers said that they thought their bills were affordable, which is a 7 per cent decrease compared to 2017. We are now average compared to the other WaSCs. We have shown an improvement of 2 per cent compared to the ODI baseline, which was based on 2011 and 2012 scores.

Table 3B - Sub-measure Performance

	Unique ID	PC / sub-measure ID	PC / sub-measure	Unit	2017-18 performance level - actual	2018-19 performance level - actual	2018-19 CPL met?
1	PR14ANHWSW_W-H1	00	W-H1: Water infrastructure	category	Green	Green	Yes
2	PR14ANHWSW_W-H1	01	Unplanned interruptions >12 hours	nr	1263	2,267	No
3	PR14ANHWSW_W-H1	02	Reactive mains bursts	0	-11.0	0	Yes
4	PR14ANHWSW_W-H1	03	Customer contacts - discolouration	0	0.36	0.37	Yes
5	PR14ANHWSW_W-H1	04	Distribution maintenance index	0	0.05	0.07	Yes
6	PR14ANHWSW_W-H2	00	W-H2: Water non-infrastructure	category	Green	Green	Yes
7	PR14ANHWSW_W-H2	01	WTW with coliforms detected	0	4	5	Yes
8	PR14ANHWSW_W-H2	02	Percentage (%) service reservoirs with >5% coliforms	%	0.00	0.00	Yes
9	PR14ANHWSW_W-H2	03	WTW turbidity	0	0	0	Yes
10	PR14ANHWSWW_S-F1	00	S-F1: Sewerage infrastructure	category	Green	Green	Yes
11	PR14ANHWSWW_S-F1	01	Pollution incidents	nr	113	82	Yes
12	PR14ANHWSWW_S-F1	02	Sewer collapses	nr	246	214	Yes
13	PR14ANHWSWW_S-F1	03	Internal flooding (overloaded + other causes)	nr	161	112	Yes
14	PR14ANHWSWW_S-F1	04	Sewer blockages	nr	11,936	11,908	Yes
15	PR14ANHWSWW_S-F2	00	S-F2: Sewerage non-infrastructure	category	Green	Green	Yes
16	PR14ANHWSWW_S-F2	01	Population equivalent (PE) WwTW in breach of consent	%	0.48	5.00	No
17	PR14ANHWSWW_S-F2	02	WwTW failing numeric consent	0	1.11	1.30	Yes

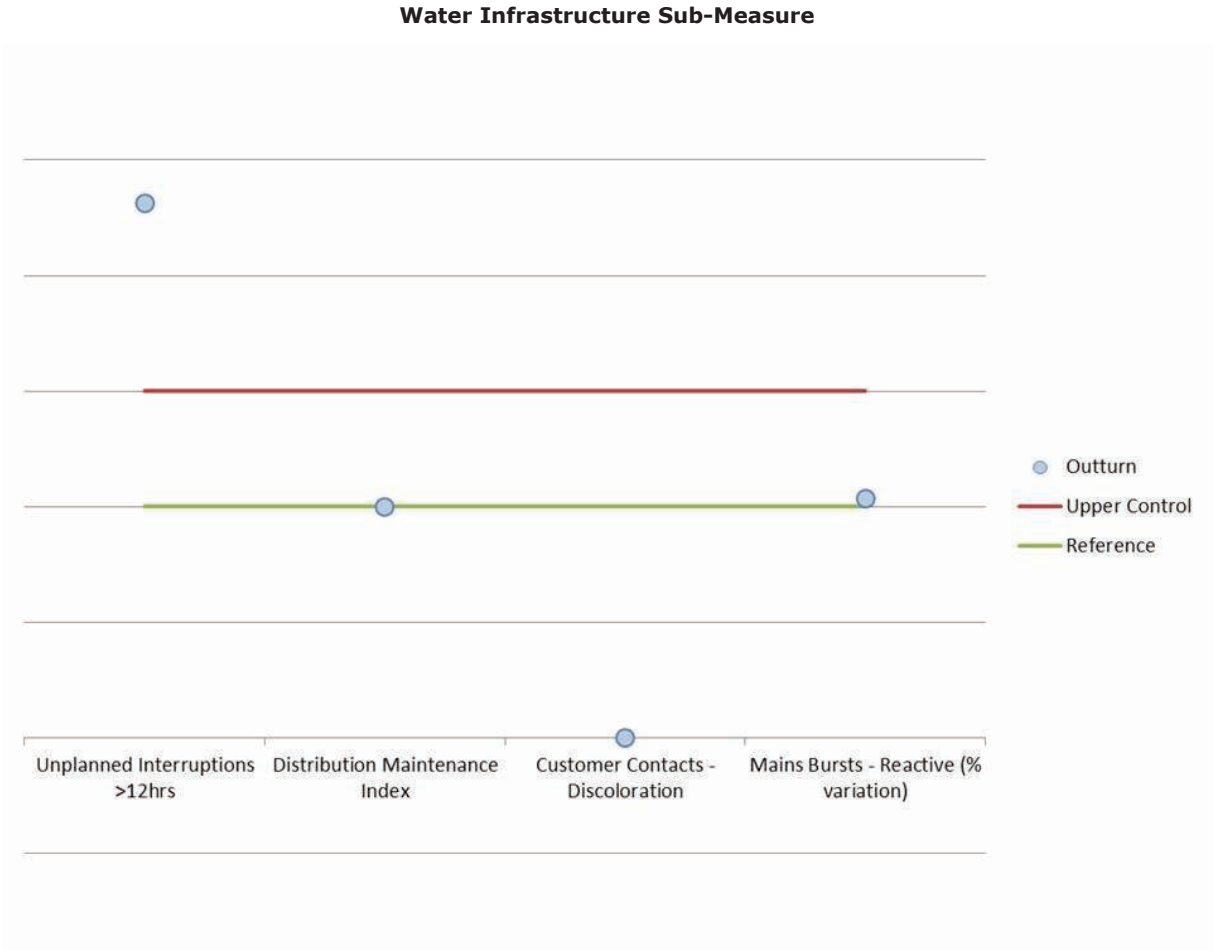
1 To continue to provide the services that our customers expect now and over the long term, we need to look after our assets (e.g. equipment, pipes and buildings). We use the term serviceability to mean the ability of our assets to continue delivering a reference level of service to customers.

2 Serviceability is assessed by 13 sub-measures. The measures are split over four types of asset. For each measure we agree a 'normal' level, called the reference level, which is typically close to the best historical performance. We must also make sure that we do not exceed the worst level of performance that can be accounted for by reasonable natural variation – this is called the upper control limit. If our performance is worse than this upper control limit a penalty may be incurred. Table 3B shows our performance in 2018/19 against each of the sub-measures.

3 Further detail about all our serviceability sub-measures is available on our website at www.anglianwater.co.uk. This includes an explanation about how our sub-measure performance translates into revenue adjustments.

Water infrastructure (3B.1)

4 In 2018/19 three of our water infrastructure indicators were assessed as Green. The unplanned interruptions over 12 hours indicator was above the upper control limit and therefore is assessed as Amber. Under the mechanism of our serviceability assessment this means that the overall assessment for the water infrastructure sub-service remains Green. The performance of each sub-measure against its reference level and upper control limit is shown on the chart below.



Unplanned interruptions >12 hours (3B.2)

5 The total number of properties affected by unplanned interruptions of greater than 12 hours was 2,267 (1,263 in 2017-18).

6 There has been a significant increase in the number of properties affected by unplanned supply interruptions greater than 12 hours this year when compared with 1,263 reported in 2017/18.

7 One event at Weston Underwood accounted for 1,177 properties affected by unplanned supply interruptions >12 hours. This one event represents 52 per cent of the properties interrupted for >12 hours in 2018/19.

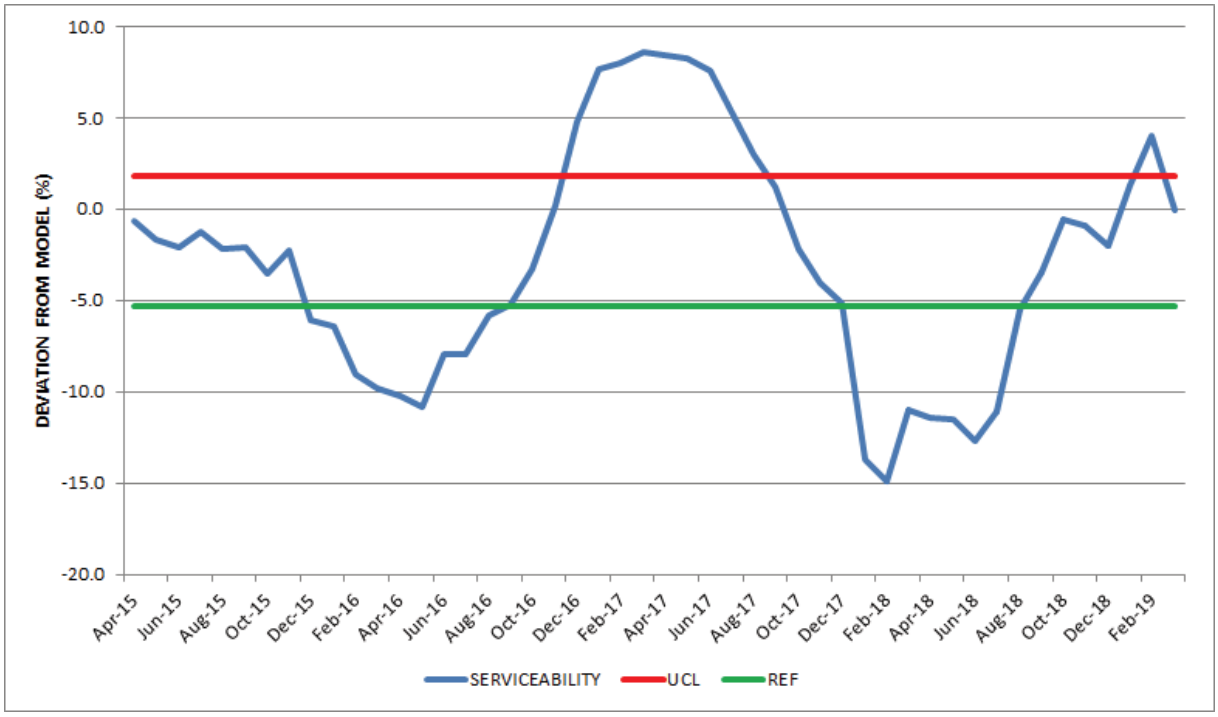
Reactive mains bursts (3B.3)

8 Since the start of AMP6 (April 2015), we have changed our serviceability measure for burst mains to report the number of reactive burst mains as a variation from the modelled output produced by the Cranfield model. To maintain consistency with our Price Review submissions we will use the same model that was used for those submissions throughout AMP6. In line with previous years and consistent with the definition outlined in our PR14 final business plan, we exclude burst mains where there has been no impact to the customer/service.

9 The Cranfield University WISPA (Water Infrastructure Serviceability Performance Assessment) model is used to normalise our reactive burst main numbers. The model applies the local weather, soils, mains material, diameter, age and district metered area (DMA) characteristics to predict the expected number of reactive bursts. Adjusting for exogenous variables enables our performance to be determined without the impact of seasonal effects.

10 The differences between the Cranfield University WISPA predictive model and the number of reactive burst mains (on a 12 month rolling basis) is shown in the graph below.

Burst Mains deviation from model



11 Performance has remained under the reference level in 2018/19, in spite of the challenges posed by the after-effects of the 'Beast from the East' combined with a long dry summer putting stress on the pipes through soil movement. This had a notable impact on the number of bursts we experienced compared to previous years, but our programme of proactive leak detection meant that the impact to the customer was minimised.

12 Overall, the number of reactive bursts increased slightly compared to last year. There were 3,748 reactive bursts in 2018/19, compared to 3,364 in 2017/18. The model reflected the impact of these weather events, and we are continuing to refine the mechanics of the model to further improve our proactive repairs and maintenance programme.

13 In 2018/19 we identified and repaired 1,577 bursts using proactive leak detection. This is the highest number we have reported since we started our programme of proactive detection.

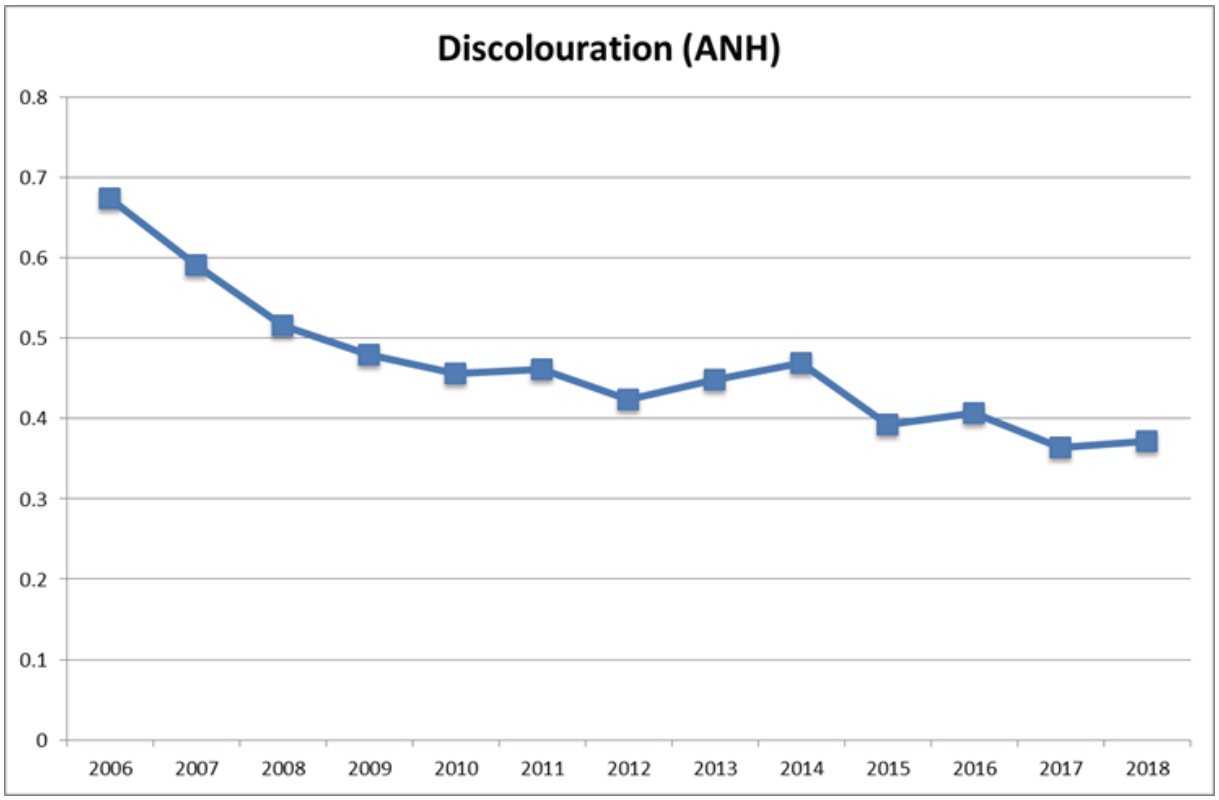
14 Local level model results are used to support our AMP6 water mains rehabilitation programme. The model has been used to identify our regional risk of mains bursting due to environmental changes and we have implemented this in our asset management appraisal processes.

Customer contacts - discolouration (3B.4)

15 Discolouration (brown/black or orange) is a subset of the acceptability of water to consumers measure reported by DWI annually in the Chief Inspector's Report.

16 The number of discolouration contacts (brown/black or orange) received per 1,000 population served in 2018 was 0.37.

17 The graph below shows the historic trend in combined number of discolouration contacts received.

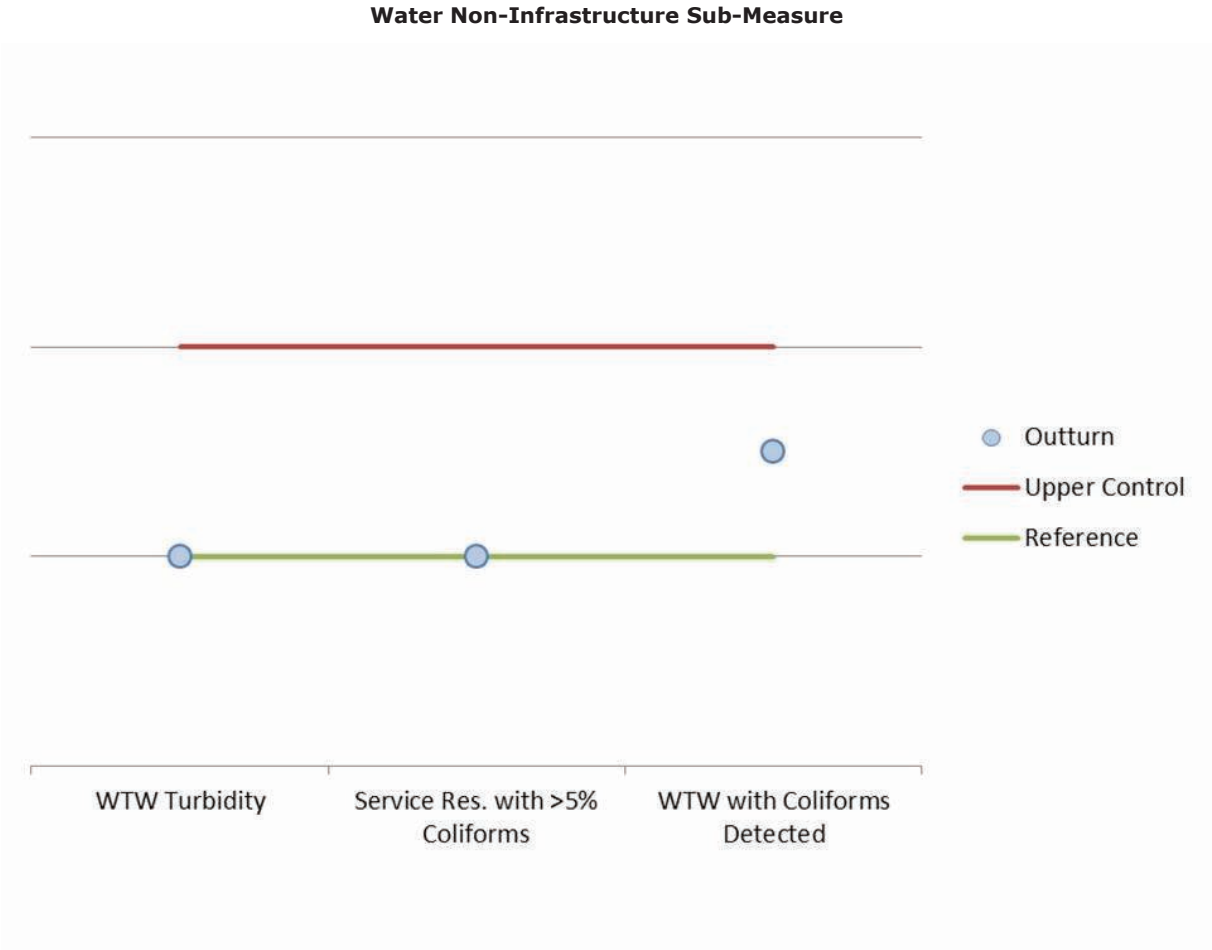


Distribution Maintenance Index (3B.5)

18 The Distribution Maintenance Index (DMI) is a measure of the condition of drinking water infrastructure. It can be impacted by water quality exceedances for iron, manganese or turbidity. DMI for 2018 was 0.07 per cent (measured as non-compliance). This represents a slight reduction in compliance when compared with the 2017 figure of 0.05 per cent. There were eleven iron exceedances from customer taps in 2018 compared with the five iron exceedances in 2017. There were no manganese or turbidity exceedances at any Public Water Supply Zone in 2018.

W-H2: Water non-infrastructure (3B.6)

19 In 2018/19 all three of our water non-infrastructure indicators were assessed as Green. This is because all three were within their upper control limits. Under the mechanism of our serviceability assessment this means that the overall assessment for the water non-infrastructure sub-service remains Green. The performance of each sub-measure against its reference level and upper control limit is shown on the chart below.



WTW with coliforms detected (3B.7)

20 Coliforms were detected at five WTWs in 2018, a small increase on the 2017 total. Coliforms were detected on a single occasion at Welton, Bracebridge Heath, Hillington and Glandford WTWs in the Anglian region and Dalton Piercy WTW in the Hartlepool region. In all cases, our investigations were deemed satisfactory and no enforcement action was initiated by the DWI.

Percentage (%) service reservoirs with >5% coliforms (3B.8)

21 The percentage of service reservoirs with coliforms detected in more than 5 per cent of samples has remained at zero per cent for 2018.

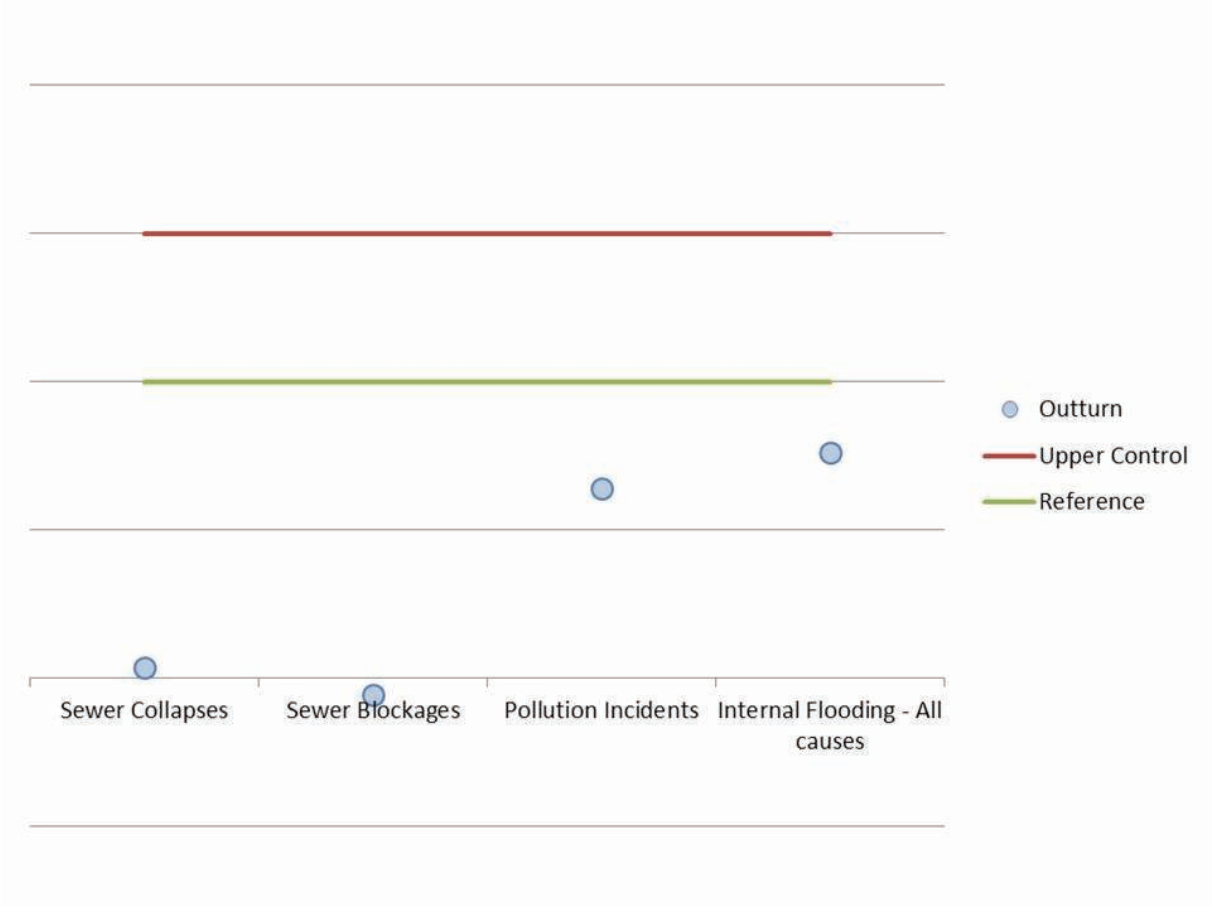
WTW turbidity (3B.9)

22 There were no WTWs with a turbidity 95-percentile greater than or equal to 0.5 NTU (nephelometric turbidity units) for 2018.

S-F1: Sewerage infrastructure (3B.10)

23 In 2018/19, all four of our sewerage infrastructure indicators were assessed as Green. This is because all four were within their upper control limits. Under the mechanism of our serviceability assessment this means that the overall assessment for the sewerage infrastructure sub-service remains Green. The performance of each sub-measure against its reference level and upper control limit is shown on the chart below.

Sewerage Infrastructure Sub-Measure



Pollution incidents (3B.11)

24 The data for this line is based on the 2018 calendar year.

25 During 2018 there were 82 category 1-3 pollution incidents which were attributed to serviceability assets (does not include transferred sewers), namely combined sewer overflows (CSOs) rising mains and foul sewers (2017:113).

26 The bulk of the incidents (65) were on foul sewers (2017:84) with CSOs accounting for eight (2017:9) incidents and rising mains accounting for nine (2017:20) incidents.

27 There were two incidents from transferred foul sewers but these are not included for the purposes of the serviceability measure.

Pollution Incidents on Serviceability Assets

	Cat 1	Cat 2	Cat 3	Total
Pre-transfer assets	0	1	81	82
Transferred assets (not included for serviceability)	0	0	2	2
Total	0	1	83	84

Sewer collapses (3B.12)

28 We do not count collapses and bursts on transferred sewers and rising mains for this measure.

29 There were 113 burst rising mains and 101 sewer collapses, totaling 214 for 2018/19. This is a slight decrease from 2017/18 which saw 246.

Internal flooding (overloaded and other causes) (3B.13)

30 This was a new measure for AMP6 and this is the fourth year we have reported. It is the sum of properties flooded from public sewers due to sewer overloaded (including those attributable to severe weather) and other causes. Incidents attributable to sewers that transferred to us in 2011 are excluded.

31 We reported 161 properties for 2017/18 and, following a dry year, we are reporting 112 for 2018/19. This comprises 16 (28 in 2017/18) overloaded properties and 96 (133 in 2017/18) properties due to other causes.

32 Of the 16 properties flooded internally due to overloaded sewers, 7 were caused by severe weather events.

33 The table below shows the last five years data and the breakdown of cause.

Flooding Causes - Public Sewers

Causes	2014/15	2015/16	2016/17	2017/18	2018/19
Overloaded sewers (excl. severe weather)	54	27	61	20	9
Severe Weather	30	17	14	8	7
Pumping Station Failure	41	9	10	17	3
Equipment Failure	2	5	9	0	5
Jetting	10	8	7	10	8
Blockage	118	148	152	100	77
Collapse	8	6	11	6	3
Total	**263**	**220**	**264**	**161**	**112**

34 The data shows we have had a dry year compared to previous years, showing a much lower number of overloaded and severe weather events.

35 We have had 23 fewer blockage related incidents reported than in 2017/18. This is in part as a result of the ongoing success of our Keep It Clear campaign, where we target hotspot areas and inform customers how to prevent blockages.

36 There have been five internal flooding incidents caused by equipment failures on public sewers reported in 2018/19. There was a slight decrease in jetting incidents by 2 incidents since 2017/18. We have increased vigilance and better organisation of our planned preventative maintenance programme on public sewers.

Sewer blockages (3B.14)

37 We do not count blockages on transferred sewers for this measure.

38 Public sewer blockage numbers have decreased this report year from 11,936 in 2017/18 to 11,908 in 2018/19, and are still within the upper control limit and below the reference level. We continue to closely monitor blockage jobs and have implemented several initiatives aimed at reducing blockages, whilst at the same time improving customer service and satisfaction.

39 We have reviewed our blockages processes, in response to auditor feedback last year, and have now prioritised our Problem, Action, Impact codes to ensure that blockages are more effectively captured.

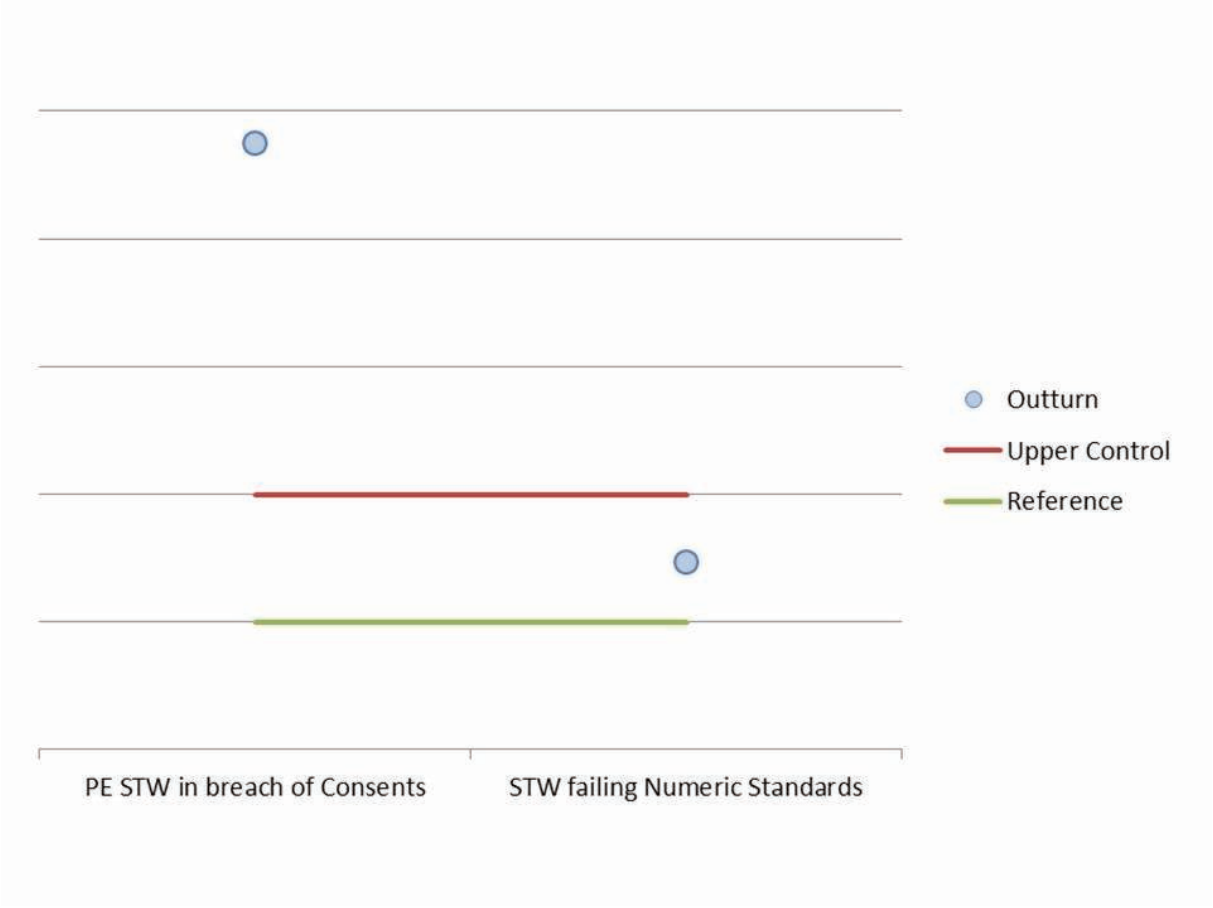
40 We continue our programme of inspections and interventions to help identify and resolve any physical issues. Planned preventative maintenance is carried out in areas considered to be at a high risk of blockages that may cause service failures, such as flooding or pollution incidents. We remove interceptors and repair sewer defects on both ex-Section 24 as well as traditional public sewers. This practice has been updated to apply to individual premises where we recognise these customers are contacting us more than once in 12 months for a water recycling enquiry. We also include these customers in our Keep It Clear campaign where relevant.

41 We engage directly with our customers in districts where sewer blockages occur more often than usual. As part of our Keep It Clear campaign we are working with local organisations to reduce the numbers of avoidable blockages (caused by incorrect disposal of fats, oils, greases, wet wipes for example). The campaign extends to 24 different locations around the Anglian Water region. In almost every location our campaign has seen a sustained reduction in blockages, with many areas recording greater than a 50 per cent reduction.

S-F2: Sewerage non-infrastructure (3B.15)

42 In 2018/19 our sewerage non-infrastructure indicator for STWs failing numeric standards was assessed as Green. The population equivalent in breach of consents indicator was above the upper control limit and therefore is assessed as Amber. Under the mechanism of our serviceability assessment this means that the overall assessment for the sewerage non-infrastructure sub-service remains Green. The performance of each sub-measure against its reference level and upper control limit is shown on the chart below.

Sewerage Non-Infrastructure Sub-Measure



Population equivalent (PE) WwTW in breach of consent (3B.16)

43 Three Water Recycling Centres (WRC), Bocking, Great Billing and Southwold, failed in 2018 against these criteria. These WRCs represents 5.00 per cent of our total resident population served by works with numeric consents of 6,898.228

Failing WRCs

Water Recycling Centre	Failing Category
Bocking WRC	UWWTR P
Great Billing WRC	OSM Sanitary LUT
Southwold WRC	OSM Sanitary LUT

WwTW failing numeric consents (3B.17)

44 This is a measure of the percentage of our WRCs which were compliant during 2018, according to the Environment Agency End of Year (EoY) Performance report. Out of 756 discharges with numeric consents, ten were non-compliant for 2018. At 98.68 per cent compliance for 2018, this is a deterioration compared to 2017 (eight works out of 718, 98.89 per cent).

45 Although, as in 2017, we have 718 operator self monitoring (OSM) sampling points and 715 sites, the EA are now counting all numeric discharges from which final effluent can be discharged and those numeric discharges which are non-OSM. This approach is consistent across the industry.

46 To improve discharge permit compliance, the following improvements have or will be implemented:

- A new range of daily process reports have been produced and monitored on a daily basis for High Risk Sites. Continuation of high level reporting on a daily, weekly and monthly basis
- A Water and Water Recycling Joint Compliance Investigation plan has been implemented to improve compliance performance
- Development of risk tools for end of pipe and process performance
- Continuation of the Advanced Licence to Operate for Optimisers
- Development of new Technical Training Courses and materials for operational staff.

47 The ten non-compliant WRCs were Bocking, Great Billing, Ingoldmells, Newton Marsh, Southend, Southwold, Spalding, Stanbridgeford, Towcester and Westleton.

48 The difference in the way serviceability is calculated compared to EoY Performance is:

- Look up table failures (BOD, SS, NH3) are dependent on sampling frequency, as to be compliant a WRC must pass 95 per cent of samples. The EoY performance report includes failing works throughout the year whereas serviceability is based on the samples taken at year end. Therefore where the number of samples taken at a WRC during the year has increased (by returning from reduced to normal frequency) the WRC has the potential to become compliant for serviceability by year end, but would remain non-compliant for the EoY Performance report.
- Failing samples attributed to a specific mechanical breakdown are now counted in the EoY Performance report. The rationale was that such samples were not taken under normal operating conditions and so were rescheduled. Historically they did not appear.

49 There was no difference in the WRCs failing in the EoY Performance report and those failing for serviceability in 2018.

Table 3C - Abstraction Incentive Mechanism

	Abstraction site	2018-19 AIM performance [Ml]	2018-19 normalised AIM performance [nr]	Cumulative AIM performance 2016-17 onwards [Ml]	Cumulative normalised AIM performance 2016-17 onwards [nr]	Contextual information relating to AIM performance
1	MARHAM-RIVER NAR WA	-4.8	-0.24	-4.8	-0.24	2018-19 is the only year in the period with flows below Q95
2	COSTESSEY-PITS RIVER INTAKE	393.4	0.19	576.2	0.20	abstraction increase in 2018-19 due to Heigham commissioning works
	Total	388.6	-0.05	571.4	-0.04	

1 Since privatisation, and as a result of the outcome of extensive environmental assessments, we have made significant investment to help understand and minimise the impacts of our abstractions. As a result, we have reduced output from, relocated or closed a number of our abstraction sources. We have also completed a wide range of environmental mitigation measures, the most notable of which was the creation of the 30 hectare wildlife lagoons at Rutland Water. We are completing a number of river restoration schemes in AMP6 to mitigate any potential abstraction impacts and have identified a further programme of river habitat improvements in AMP7.The Anglian Water supply area is geographically large with a significant rural population and experiences some of the lowest rainfall in the country. The Environment Agency has assessed the region as being in 'serious water stress' and, in addition, it is recognised as being particularly vulnerable to the impacts of climate change. The region is characterised by a high number of water–dependent designated conservation sites and we work closely with the Environment Agency to manage the associated environmental pressures. Our region's slow moving rivers are often ecologically diverse and, whilst they can support abstraction, this may cause environmental stress during periods of low rainfall.

2 During AMP5, two Anglian Water surface water sources were identified for sustainability changes to address the impacts to the respective rivers immediately downstream from our abstraction points. At both, we have agreed to upfront licence changes with the Environment Agency which will reduce the permitted hands-off flow/minimum residual flow requirements within specified time periods. These licence changes were not made immediately due to the need for significant capital investment in order to maintain public water supplies. In the meantime we are seeking to manage current abstraction rates from the sites in order to minimise any ongoing environmental impact.

3 We are reporting on both these sites for the Abstraction Incentive Mechanism (Table 3C): Marham (River Nar) and Costessey (River Wensum).

Marham (River Nar) (3C.1)

4 The hands-off flow requirement in the Marham abstraction licence for the River Nar is due to increase from April 2025. This will result in a large sustainability change for the Marham source and any alterations to our current abstraction regime in this resource zone will require significant investment. We have assessed the impacts in our Draft Water Resources Management Plan 2019 and have included a new transfer option for delivery by 2025. We also agreed with the Environment Agency and Natural England to implement interim river restoration and enhancement measures for the River Nar during AMP6.

5 The option to manage the demand from alternate abstraction sources is limited primarily to use of the Wellington Wellfield groundwater source. Use of the Wellington Wellfield is the identified drought contingency measure for the Marham source, and is constrained by the annual abstraction licence limit.

6 Abstraction from the Marham surface water source during 2018/19 has shown a steady decrease over the reporting period

Costessey (River Wensum) (3C.2)

7 The minimum residual flow requirement in the Costessey abstraction licence for the River Wensum increased in April 2019. The licence changes result in a significant sustainability reduction of 46 Ml/d which is being addressed through an AMP6 investment scheme to enhance the treatment at the downstream Heigham surface water source, which was returned to service in March 2019. We agreed with the Environment Agency and Natural England to progressively reduce abstraction from Costessey and to re-instate the Heigham intake which is located outside of the River Wensum Special Area of Conservation. Since 2011 abstraction at Costessey has reduced by about a third as we have prioritised the use of Heigham intake when it was possible to do so without compromising public water supply as a result of poor water quality.

8 As part of the commissioning works required to transfer abstraction to the Heigham surface water source, the Heigham intake was off line for part of 2018/19. This resulted in a necessary increase in the abstraction at the Costessey river intake in order to maintain public water supplies during this period.

9 During the 2018/19 reporting period there were 84 occasions when flows in the Wensum dropped below the Q95 threshold (the lowest 5 per cent of flows normally experienced in the river). Of the 84 low flow days, 53 were during the Heigham intake works when Costessey abstractions needed to increase. This resulted in an unavoidable increase in abstraction above baseline reported for 2018/19.

Table 3D - Service Incentive Mechanism

	Line description	Score nr
A	**Qualitative performance**	
1	1st survey score	4.59
2	2nd survey score	4.56
3	3rd survey score	4.58
4	4th survey score	4.69
5	Qualitative SIM score (out of 75)	67.59
B	**Quantitative performance**	
6	Total contact score	51.07
7	Quantitative SIM score (out of 25)	22.45
C	**SIM score**	
8	Total annual SIM score (out of 100)	90.04

1 For commentary please see Table 3A lines 32 and 33.

Table 4A - Non-financial Information

	Line description	Units	Current year	
			Unmeasured	Measured
	Retail			
A	**Household**			
1	Number of void households	000s	19.142	81.769
2	Per capita consumption (excluding supply pipe leakage) l/h/d	l/h/d	175.17	126.15
	Wholesale			
B	**Volume (Ml/d)**		**Water**	**Wastewater**
3	Bulk supply export	Ml/d	64.251	1.959
4	Bulk supply import	Ml/d	2.706	7.541
5	Distribution input	Ml/d	1,159.154	

Number of void households (4A.1)

1 The number of measured household voids has increased in the year whilst the number of unmeasured voids has decreased. Further data cleansing during the year has led to a reclassification of properties between measured and unmeasured and also between residential and business. Other activities have also identified where properties have been incorrectly classified as void and as a result have been transferred into billed.

Per capita consumption (4A.2)

2 Per household consumption (PHC) for both unmeasured and measured properties has increased this year in response to the hot summer weather. Per capita consumption (PCC) is calculated by taking PHC and dividing by occupancy multiplied by property numbers. Occupancy is calculated using methodology set out by the Environment Agency in the WRMP guidelines. This year measured occupancy has increased, which has led to a fall in measured PCC even though measured PHC has risen. Unmeasured PCC has increased compared to the prior year.

Bulk supply exports (4A.3)

3 Water exports relate mainly to bulk supplies to Affinity Water (46.2 Ml/d) and Severn Trent Water (15.8 Ml/d) and have increased in 2018/19 compared to 2017/18 (when we exported 36.9 Ml/d to Affinity Water and 15.3 Ml/d to Severn Trent). This was primarily caused by the rise in water demand during the warmer and drier than average weather.

4 Sewerage exports relate to discharges to nine Water Recycling Centres in the Thames Water and Severn Trent Water areas.

Bulk supply import (4A.4)

5 Water imports relate mainly to imports from Essex and Suffolk. Sewerage imports primarily relate to discharges to two of our Water Recycling Centres from Thames Water customers.

Table 4B - Wholesale Totex Analysis

	Line description	Current year		Cumulative 2015-20	
		Water £m	Wastewater £m	Water £m	Wastewater £m
A	**Actual totex**				
1	Actual totex	413.048	514.744	1,483.414	1,928.433
B	**Items excluded from the menu**				
2	Third party costs	14.219	5.633	36.994	19.199
3	Pension deficit recovery payments	4.398	6.830	15.622	23.506
4	Other 'Rule book' adjustments	0.201	0.489	0.201	0.931
5	Total items excluded from the menu	18.818	12.952	52.817	43.636
C	**Transition expenditure**				
6	Transition expenditure	-	-	26.837	28.591
D	**Adjusted Actual totex**				
7	Adjusted Actual totex	394.230	501.792	1,457.434	1,913.388
8	Adjusted Actual totex base year prices	340.471	433.366	1,316.269	1,727.702
E	**Allowed totex**				
9	Allowed totex based on final menu choice – base year prices	300.434	506.142	1,376.782	1,991.258

Actual totex (4B.1)

1 Actual totex in the year was £927.8 million.

Items excluded from the menu (4B.2-5)

2 Costs excluded from the menu are third party costs of £19.9 million and pension deficit payments of £11.2 million (lines 2 and 3), other rule book adjustments of £0.7m (line 4), making adjusted actual totex £896.0 million (line 7).

Adjusted actual totex base year prices (4B.8)

3 At base year prices (2012/13), adjusted actual totex in the year is £773.8 million.

Allowed totex (4B.9)

4 Allowed menu totex is £806.6 million in base year prices (line 9), giving an adjusted out-performance of £32.8 million in the year.

Totex outperformance

5 Outperformance in year is due to efficiencies achieved offset by programme planning differences of £13 million.

6 The difference in base year prices between total allowed totex and adjusted actual totex on a cumulative basis is £324.1, which is now entirely comprised of totex outperformance.

7 Our totex outperformance of c.£324 million is as a result of numerous totex efficiency measures and initiatives. Totex and Capital programme efficiencies continue to be driven through our Alliance delivery model, delivering efficient, innovative and lower carbon solutions. Our operating cost efficiency has been achieved through initiatives including supply chain efficiencies, lean process improvements, energy efficiency projects and general tight cost control. These continue to be key areas of focus as we move into the final year of the AMP.

8 By maximising the benefits of our alliances and innovation, and delivering strong efficiencies across our programme, we are able to deliver further benefits for customers. This commenced in 2017/18 and in total we are increasing our planned investment by £165.0 million over AMP6 to improve resilience and enhance our service to customers. During 2018/19 we re-invested £55.7 million in capital maintenance projects and £24.0 million in operational initiatives bringing the total reinvestment spend in the AMP to date to £79.2 million of capital maintenance and £26.8 million of opex.

Table 4C - Forecast Impact of Performance on RCV

	Line description	Water £m	Wastewater £m
1	Cumulative totex over/underspend so far in the price control period	(70.069)	(305.171)
2	Customer share of cumulative totex over/underspend	35.436	151.638
3	RCV element of customer share of cumulative totex over/underspend	(33.649)	(147.866)
4	Adjustment for ODI rewards or penalties	-	-
5	RCV determined at FD at 31 March	3,064.184	4,917.159
6	Projected 'shadow' RCV	3,030.535	4,769.293

Cumulative totex over/underspend so far in the price control period (4C.1)

1 This is the difference between the actual cumulative totex for the first four years of the price control period and the allowed totex in the first four years of the price control period. It is derived from "Totex under / over performance" as set out in section 3.5 "Totex adjustment" of the PR14 'Wholesale total expenditure (totex) sharing' model which was published alongside the "Ofwat PR14 reconciliation rulebook" and then inflated to report year prices (2018/19 year average) using RPI inflators published by Ofwat alongside RCV values. A negative number indicates that actual totex spend has been less than the allowed totex.

Customer share of cumulative totex over/underspend (4C.2)

2 This is the customer share of the difference in line 4C.1. It is calculated using the formula: ('menu baseline totex' – 'actual menu totex') * (1 – 'cost sharing rate'). The cost sharing percentage is sourced from the PR14 Final Determination Wholesale Menu Models for water and wastewater. The cost sharing percentage from the menu models is the Anglian Water share (water 49.4 per cent, wastewater 50.3 per cent), therefore the customer share is one minus this rate. This figure is in report year prices (2018/19 year average).

RCV element of customer share of cumulative totex over/underspend (4C.3)

3 This is the RCV impact of the difference between the actual cumulative totex for the AMP and the allowed totex, as shown in line 4C.1. This is equivalent to "Water: RCV adjustment" and "Wastewater: RCV adjustment" as set out in section 4.3 "RCV adjustments" of the PR14 'Wholesale total expenditure (totex) sharing' model which was published alongside the "Ofwat PR14 reconciliation rulebook". It is presented in the same price base as 4C.5 (i.e. March RPI as published by Ofwat) so that 4C.6 is also in that price base. Given that the Rulebook totex sharing model requires totex inputs for all five years of AMP6 to generate a meaningful output, we have used the assumption of neither out nor under performance against allowed totex for 2019/20 in the model.

Adjustment for ODI rewards or penalties (4C.4)

4 Anglian Water has no ODI rewards / penalties which affect RCV (all ODI financial rewards / penalties are revenue items).

RCV determined at FD at 31 March (4C.5)

5 Obtained from RCVs published on the Ofwat website (address below):

6 https://www.ofwat.gov.uk/publication/regulatory-capital-values-2019/

Projected 'shadow' RCV (4C.6)

7 Calculated field, the sum of lines 4C.3 to 4C.5.

Table 4D - Wholesale Totex Analysis - Water

	Line description	Units	Water resources		Network+				Total
			Abstraction licences	Raw water abstraction	Raw water transport	Raw water storage	Water treatment	Treated water distribution	
A	**Operating expenditure**								
1	Power	£m	-	9.342	4.124	0.266	8.275	16.570	**38.577**
2	Income treated as negative expenditure	£m	-	(0.224)	(0.110)	(0.022)	(0.240)	(0.550)	**(1.146)**
3	Abstraction charges/ discharge consents	£m	9.946	-	-	-	0.545	-	**10.491**
4	Bulk supply	£m	-	-	-	-	2.145	-	**2.145**
5	Other operating expenditure - renewals expensed in year (Infrastructure)	£m	-	-	-	-	-	34.788	**34.788**
6	Other operating expenditure - renewals expensed in year (Non-Infrastructure)	£m	-	-	-	-	-	-	**-**
7	Other operating expenditure - excluding renewals	£m	-	13.620	2.895	0.113	27.184	72.746	**116.558**
8	Local authority and Cumulo rates	£m	-	3.043	0.482	-	5.988	31.464	**40.977**
9	**Total operating expenditure excluding third party services**	£m	9.946	25.781	7.391	0.357	43.897	155.018	**242.390**
10	Third party services	£m	0.591	1.775	1.882	-	3.279	3.377	**10.904**
11	**Total operating expenditure**	£m	10.537	27.556	9.273	0.357	47.176	158.395	**253.294**
B	**Capital Expenditure**								
12	Maintaining the long term capability of the assets - infra	£m	-	0.558	0.502	-	-	28.234	**29.294**
13	Maintaining the long term capability of the assets - non-infra	£m	-	4.310	-	0.084	26.432	30.586	**61.412**
14	Other capital expenditure - infra	£m	-	1.098	0.682	-	-	34.216	**35.996**
15	Other capital expenditure - non-infra	£m	-	4.271	0.062	-	27.718	5.582	**37.633**
16	Infrastructure network reinforcement	£m	-	-	-	-	-	20.144	**20.144**
17	Total gross capital expenditure (excluding third party)	£m	-	10.237	1.246	0.084	54.151	118.762	**184.479**
18	Third party services	£m	-	-	-	-	0.251	3.064	**3.314**
19	**Total gross capital expenditure**	£m	-	10.237	1.246	0.084	54.401	121.825	**187.794**
C	**Grants and contributions**								
20	Grants and contributions	£m	-	-	-	-	-	32.438	**32.438**
21	**Totex**	£m	10.537	37.793	10.519	0.441	101.577	247.782	**408.650**
D	**Cash Expenditure**								
22	Pension deficit recovery payments	£m	-	0.476	0.118	-	1.427	2.377	**4.398**
23	Other cash items	£m	-	-	-	-	-	-	**-**
24	**Totex including cash items**	£m	10.537	38.269	10.637	0.441	103.004	250.159	**413.048**

Line description	Units	Water resources		Network+			
		Abstraction licences	Raw water abstraction	Raw water transport	Raw water storage	Water treatment	Treated water distribution

E Unit cost information (operating expenditure)

25	Licenced volume available	Ml	605,391.000	-	-	-	-	-
25	Volume abstracted	Ml	-	486,774.548	-	-	-	-
25	Volume transported	Ml	-	-	121,714.015	-	-	-
25	Average volume stored	Ml	-	-	-	293.009	-	-
25	Distribution input volume	Ml	-	-	-	-	423,091.072	-
25	Distribution input volume	Ml	-	-	-	-	-	423,091.072
26	Unit cost	£/Ml	17.405	56.609	76.187	1,218.393	111.503	374.376
27	Population	000s	4,724.217	4,724.217	4,724.217	4,724.217	4,724.217	4,724.217
28	Unit cost	£/pop	2.230	5.833	1.963	0.076	9.986	33.528

1 Line numbers shown within the table are as per the Ofwat APR spreadsheet.

Change in operating expenditure compared to 2017/18 - Regulatory Accounts

2 Underlying water services operating expenditure increased by £21.8 million (9.4 per cent) in real terms. Whilst a significant amount of the increase in cost during the year is attributable to maintaining service following the 'Beast from the East' and the hot, dry summer, we have not classified these costs as atypical. Dealing with the favourable or adverse impact arising from changes in the weather forms part of our day-to-day operations and establishing a 'normal' or base year against which to judge costs as atypical is therefore impractical.

Movement in costs 2017/18 to 2018/19

	Water resources £m	Raw water transport and storage £m	Water treatment £m	Treated water distribution £m	Water Total £m
2017/18 reported operating costs	**35.8**	**9.6**	**43.9**	**136.2**	**225.5**
Atypical expenditure 2017/18	0.0	0.1	(0.3)	(0.6)	(0.8)
Underlying costs 2017/18	35.8	9.7	43.6	135.6	224.7
Inflation @ 3.06%	1.1	0.3	1.3	4.1	6.8
2017/18 underlying costs indexed to 2018/19 prices	**36.9**	**10.0**	**44.9**	**139.7**	**231.5**
2018/19 reported operating costs	**38.1**	**9.6**	**47.2**	**158.4**	**253.3**
(Increase)/decrease in underlying costs from 2017/18	**(1.2)**	**0.4**	**(2.3)**	**(18.7)**	**(21.8)**

Operating expenditure (4D.1-4D.11)

Water resources

3 Operating expenditure, increased by £1.2 million in real terms. We saw an increase in power costs of £1.5 million due to forward purchases of power made in prior years at a time when wholesale market costs had increased, including an increase in non-wholesale (transmission) costs from the prior year. This was partially offset by a reduction in abstraction costs of £0.4 million and other operating expenditure and rates of £0.8 million. Third party costs increased by £0.9 million due to the increase in demand for water from Affinity Water and Severn Trent during the summer.

Raw water transport and storage

4 Costs in real terms reduced by £0.4 million, with a fall in third party costs of £0.2 million due to a reduction in the volume of non-potable water transported as well as a reduction in power and rates of £0.2 million.

Water treatment

5 Operating expenditure increased by £2.3 million in real terms. We saw a power increase of £0.9 million resulting from an increase in wholesale costs and the cost of putting additional water into supply during the summer. Other expenditure increased by £0.7 million, also due to the increase in the volume of water treated. Business rates reduced by £0.9 million, reflecting the impact of transition relief from the 2017 revaluation. Third party costs increased by £1.4 million due to the increase in demand for water from Affinity Water and Severn Trent during the summer.

Treated water distribution

6 Costs in real terms increased by £18.7 million compared to the prior year. Of the total increase, c. £16.5 million was due to the significant increase in work arising from the 'Beast from the East' weather conditions at the end of 2017-18 followed by the hot, dry summer and includes £7.2 million of expensed renewals. The balance was incurred on internal and contracted repair and maintenance costs to maintain supply and ensure leakage targets were met.

7 Power costs increased by £2.3 million, due to the reasons previously stated for power cost increases and also due to the additional volume of water put into supply to cope with summer demand. Rates costs fell by £1.1 million due to the impact of transition relief resulting from the 2017 revaluation.

Capital Expenditure (4D.12-4D.19)

8 All of our capital expenditure is delivered through projects where master data is used to identify whether the expenditure is for maintaining the long term capability of assets or other capital assets for both infrastructure and non infrastructure.

9 This master data is also used for the classifying expenditure within the relevant price control. The majority of capital expenditure is directly attributable to the price control. Where this is not possible, capital expenditure is assigned to the business unit of principal use with an appropriate recharge of depreciation charges for these shared assets made between price control segments in table 2A.

10 Total water capital expenditure includes £3.3 million of spend on assets used to fulfil third-party agreements. Of this £3.1 million was expenditure incurred in relation to water main diversions.

Cash Expenditure (4D.22)

11 Cash expenditure reflects the share of pension deficit payments allocated to water services.

Unit Cost Information (4D.25-4D.28)

Licensed volume available (abstraction licences)

12 The volume given is the annual quantity we have licensed for public water supply. This does not include licences for the transfer of water between sources, such as river abstraction for the purpose of filling reservoirs.

Volume abstracted (raw water abstraction)

13 The volume given is for water abstracted for the purpose of public water supply, as reported to the Environment Agency as part of the statutory return. This figure does not include volumes transferred between sources, such as river abstraction for the purpose of filling reservoirs.

14 We also share a resource with Affinity Water (Ardleigh Reservoir). As this resource is managed under the Ardleigh Reservoir Committee, the licensed and abstracted volumes have not been included in these figures.

Volume transported (raw water transport)

15 This figure includes the volume abstracted from satellite sources – sources which are wholly located at sites distant from where treatment takes place. This also includes the volume of water transferred from our reservoir at Rutland Water for treatment at Saltersford WTW. This figure does not include the non-potable supply from Elsham WTW to the Humber Bank industries.

Average volume stored (raw water storage)

16 Using the Ofwat definition of raw water storage, this includes reservoirs with no natural catchment, no abstraction licence and with storage of less than 15 days. For these sites the percentage fill, as recorded on telemetry, was averaged for the year and then multiplied by the bathymetric volume to give an average fill in megalitres. We only have four reservoirs that meet these criteria: Heigham, Hall, Bedford and Saltersford. During 2018/19 Bedford reservoir was not in service.

Population (4D.27)

17 This line is the same as table 4Q.15. Please refer there for relevant commentary.

Table 4E - Wholesale Totex Analysis - Wastewater

	Line description	Units	Network+ Sewage collection			Network + Sewage treatment		Sludge			Total
			Foul	Surface water drainage	Highway drainage	Sewage treatment and disposal	Imported sludge liquor treatment	Sludge transport	Sludge treatment	Sludge disposal	
A	**Operating expenditure**										
1	Power	£m	7.465	2.298	1.059	27.365	1.660	0.043	(0.595)	-	**39.295**
2	Income treated as negative expenditure	£m	(0.179)	(0.055)	(0.025)	(0.907)	-	-	(7.344)	(2.274)	**(10.784)**
3	Discharge consents	£m	1.682	0.518	0.239	5.957	0.140	-	0.244	-	**8.780**
4	Bulk discharge	£m	-	-	-	-	-	-	-	-	**-**
5	Other operating expenditure - renewals expensed in year (Infrastructure)	£m	13.485	4.317	2.000	-	-	-	-	-	**19.802**
6	Other operating expenditure - renewals expensed in year (Non-Infrastructure)	£m	-	-	-	-	-	-	-	-	**-**
7	Other operating expenditure - excluding renewals	£m	37.031	11.880	5.784	72.230	4.468	23.215	31.904	10.627	**197.139**
8	Local authority rates and Cumulo rates	£m	0.098	0.030	0.014	19.744	1.083	0.059	3.136	0.024	**24.188**
9	**Total operating expenditure excluding third party services**	£m	59.582	18.988	9.071	124.389	7.351	23.317	27.345	8.377	**278.420**
10	Third party services	£m	-	-	-	0.729	-	0.016	0.356	0.040	**1.141**
11	Total operating expenditure	£m	59.582	18.988	9.071	125.118	7.351	23.333	27.701	8.417	**279.561**
B	**Capital Expenditure**										
12	Maintaining the long term capability of the assets - infra	£m	14.007	4.484	2.077	0.001	0.000	-	-	-	**20.570**
13	Maintaining the long term capability of the assets - non-infra	£m	12.888	4.126	1.912	83.588	4.399	1.600	14.230	1.282	**124.025**
14	Other capital expenditure - infra	£m	13.580	4.347	2.014	-	-	-	-	-	**19.941**
15	Other capital expenditure - non-infra	£m	18.552	5.939	2.752	41.267	2.172	-	2.086	-	**72.768**
16	Infrastructure network reinforcement	£m	4.417	1.414	0.655	-	-	-	-	-	**6.487**
17	Total gross capital expenditure (excluding third party services)	£m	63.446	20.310	9.410	124.856	6.571	1.600	16.316	1.282	**243.791**
18	Third party services	£m	3.023	0.968	0.448	0.050	0.003	-	-	-	**4.492**
19	**Total gross capital expenditure**	£m	66.469	21.278	9.858	124.906	6.574	1.600	16.316	1.282	**248.283**
C	**Grants and contributions**										
20	Grants and contributions	£m	13.572	4.345	2.013	-	-	-	-	-	**19.930**
21	Totex	£m	112.479	35.921	16.916	250.024	13.925	24.933	44.017	9.699	**507.914**
C	**Cash Expenditure**										
22	Pension deficit recovery payments	£m	1.418	0.387	0.128	2.835	0.128	0.902	0.645	0.387	**6.830**
23	Other cash items	£m	-	-	-	-	-	-	-	-	**-**
24	Totex including cash items	£m	113.897	36.308	17.044	252.859	14.053	25.835	44.662	10.086	514.744

Line description	Units	Network+ Sewage collection			Network + Sewage treatment		Sludge		
		Foul	Surface water drainage	Highway drainage	Sewage treatment and disposal	Imported sludge liquor treatment	Sludge transport	Sludge treatment	Sludge disposal

D Unit cost information (operating expenditure)

25	Volume collected	Ml	475,907.000	-	-	-	-	-	-	-
25	Volume collected	Ml	-	152,689.00	-	-	-	-	-	-
25	Volume collected	Ml	-	-	70,356.000	-	-	-	-	-
25	Biochemical Oxygen Demand (BOD)	Tonnes	-	-	-	156,934.265	-	-	-	-
25	Biochemical Oxygen Demand (BOD)	Tonnes	-	-	-	-	15,693.426	-	-	-
25	Volume transported	m3	-	-	-	-	-	2,262,310.350	-	-
25	Dried solid mass treated	ttds	-	-	-	-	-	-	151.007	-
25	Dried solid mass disposed	ttds	-	-	-	-	-	-	-	97.585
26	Unit cost	£/unit	125.197	124.357	128.930	792.985	465.902	10.314	183,442.070	86,252.639
27	Population	000s	6,148.203	6,148.203	6,148.203	6,148.203	6,148.203	6,148.203	6,148.203	6,148.203
28	Unit cost	£/pop	9.691	3.088	1.475	20.350	1.196	3.795	4.506	1.369

1 Line numbers shown within the table are as per the Ofwat APR spreadsheet.

Change in operating expenditure compared to 2017/18 - regulatory accounts

2 Underlying wastewater operating expenditure fell by £3.8 million (1.4 per cent) in real terms.

Movement in costs 2017/18 to 2018/19

	Sewage Collection £m	Sewage Treatment £m	Sludge £m	Sewerage Total £m
2017/18 reported operating costs	87.1	128.2	58.4	273.7
Atypical transactions 2017/18	(0.3)	1.8	(0.3)	1.2
Underlying costs 2017/18	**86.8**	**130.0**	**58.1**	**274.9**
Inflation @ 3.06%	2.7	4.0	1.8	8.5
2017/18 underlying costs indexed to 2018/19 prices	**89.5**	**134.0**	**59.9**	**283.4**
2018/19 reported operating costs	**87.6**	**132.5**	**59.5**	**279.6**
(Increase)/decrease in underlying costs from 2018/19	**1.9**	**1.5**	**0.4**	**3.8**

Operating expenditure (4E.1-4E.11)

Sewage Collection

3 Total collection costs fell by £1.9 million in real terms. This includes increases in network repair activity of £1.6 million, discharge consent costs of £1.2 million and power costs of £0.3 million, offset by a decrease of other operating costs excluding renewals of £1.1 million. The change in costs across the foul, surface water and highways is not proportionate as we have continued to refine our hydraulic model with the result that a higher share of the of costs has been allocated to foul with reductions in cost allocation to surface water and highways.

Network+ Sewage treatment.

4 The decrease of £1.5 million was due a combination of the movement in costs on power, rates and other operating expenditure. Allowing for the impact of prior year atypical costs, power increased by £0.6 million with other operating costs and rates reducing by £2.2 million.

Sludge

5 The decrease of £0.4 million is due to improved CHP output and renewable obligation certificate (ROCs) credits totaling £2.8 million, offset by an increase in other operating expenditure of £2.4 million from additional maintenance costs, boiler gas costs, equipment hire and cake transport costs. In line with the reporting requirements for table 4W, we have refined our cost allocation methodology and are now able to report power costs in relation to sludge transportation via pipeline.

Capital Expenditure (4E.12-4E.19)

6 All of our capital expenditure is delivered through projects where master data is used to identify whether the expenditure is for maintaining the long term capability of assets or other capital assets for both infrastructure and non infrastructure.

7 This master data is also used for the classifying expenditure within the relevant price control. The majority of capital expenditure is directly attributable to price control. Where this is not possible, capital expenditure is assigned to the business unit of principal use with an appropriate recharge of depreciation charges for these shared assets made between price control segments in table 2A.

8 An allocation was required for the foul, surface water drainage and highway drainage split. The allocation was based on flow estimate models provided by Anglian Water's modelling team.

9 An allocation was also required for the sewage treatment and disposal and the imported sludge liquor treatment. This allocation is based on a population equivalent calculation.

10 Total wastewater capital expenditure includes £4.5 million of spend on assets used to fulfil third-party agreements, the majority of which being expenditure incurred in relation to sewer diversions.

Cash Expenditure (4E.22)

11 Cash expenditure reflects the share of pension deficit payments allocated to wastewater services.

Unit Cost Information (Operating Expenditure) (4E.25-4E.28)

Volume collected - foul, surface water and highways

12 We use hydraulic models covering 100 per cent of our region to assess the relative volumes used in the unit cost analysis. Foul flows are based on population data, including non-residential population. Surface water and highways volumes consider the annual rainfall experienced in our region and use an assessment of surface types such as highways and roofed area to derive volumes.

13 Reported volumes are lower than the prior year. This is due partly to lower rainfall in 2018/19 and partly to the impact of a short-term flow survey programme which has added confidence to our understanding of the connectivity of impermeable surfaces to the network.

Biochemical Oxygen Demand (BOD) - sewage treatment and sludge liquor treatment

14 Sewage treatment is total pollution load in tonnes per year discharged into the sewerage system. Based on modelled volumes, we assume BOD on sludge liquor treatment is 10 per cent of reported sewage treatment BOD.

Dried mass solid treated and dried mass solid disposed

15 These figures are the same as those for table 4R.25 and 4R.30.

Population (4E.27)

16 This line is the same as table 4U.11. Please refer there for relevant commentary.

Table 4F - Operating Cost Analysis - Household Retail

	Line description	Household unmeasured				Household measured				Total
		Water only	Waste-water only	Water and waste-water	Total	Water only	Waste-water only	Water and waste-water	Total	
		£m	£m	£m	**£m**	£m	£m	£m	**£m**	**£m**
A	**Operating expenditure**									
1	Customer services	0.612	1.385	1.636	3.633	1.022	2.776	10.394	14.192	**17.825**
2	Debt management	0.151	0.921	2.235	3.307	0.183	0.759	5.607	6.549	**9.856**
3	Doubtful debts	0.235	1.783	2.996	5.014	1.354	4.783	14.890	21.027	**26.041**
4	Meter reading	-	-	-	-	0.221	0.970	2.245	3.436	**3.436**
5	Other operating expenditure	0.468	1.233	1.794	3.495	0.803	2.812	10.711	14.326	**17.821**
6	**Total operating expenditure excluding third party services**	1.466	5.322	8.661	15.449	3.583	12.100	43.847	59.530	**74.979**
7	Third party services operating expenditure	-	-	-	-	-	-	-	-	**-**
8	Total operating expenditure	1.466	5.322	8.661	15.449	3.583	12.100	43.847	59.530	**74.979**
9	Depreciation - tangible fixed assets (on assets existing at 31 March 2015)	0.028	0.072	0.096	0.196	0.041	0.166	0.569	0.776	**0.972**
10	Depreciation - tangible fixed assets (on assets acquired since 1 April 2015)	0.003	0.009	0.012	0.024	0.005	0.021	0.070	0.096	**0.120**
11	Amortisation - intangible fixed assets (on assets existing at 31 March 2015)	0.003	0.007	0.009	0.019	0.004	0.016	0.055	0.075	**0.094**
12	Amortisation - intangible fixed assets (on assets acquired since 1 April 2015)	0.032	0.083	0.112	0.227	0.049	0.193	0.662	0.904	**1.131**
13	**Total operating costs**	1.532	5.493	8.890	15.915	3.683	12.496	45.203	61.382	**77.297**
14	Capital expenditure	0.111	0.289	0.389	0.789	0.165	0.670	2.291	3.126	**3.915**

B Demand-side efficiency and customer-side leaks analysis - Household

15	Demand-side water efficiency - gross expenditure	**1.340**
16	Demand-side water efficiency - expenditure funded by wholesale	**-**
17	Demand-side water efficiency - net retail expenditure	**1.340**
18	Customer-side leak repairs - gross expenditure	**1.322**
19	Customer-side leak repairs - expenditure funded by wholesale	**-**
20	Customer-side leak repairs - net retail expenditure	**1.322**

Operating expenditure (4F.1-4F.8)

1 Total household retail costs decreased by £2.0 million (2.5 per cent) in real terms, with nominal costs up by £0.2 million (0.26 per cent) compared to the prior year.

2 The bad debt charge has reduced in real terms by £2.3 million, and in nominal terms by £1.4 million, accounting for most of the reduction in operating costs from the prior year. The decrease from the prior year is due to a one-off increase in 2017/18 that has not repeated and an improvement in our underlying collection performance.

Movement in costs 2017/18 to 2018/19

	Total £m
2017/18 reported operating costs	74.7
Inflation @ 3..06%	2.3
2017/18 underlying costs indexed to 2018/19 prices	**77.0**
2018/19 reported operating costs	**75.0**
(Increase) / decrease in underlying costs from 2017/18	**2.0**

3 Unmeasured operating costs fell by £3.8 million in real terms, of which £3.1 million was a reduction in the bad debt charge. Of the overall reduction in the bad debt charge, single service customers fell by £4.4 million with dual service customers increasing by £1.3 million. Of the change in single service bad debt costs, £1.6 million is due to a one off increase in the prior year for customers billed on our behalf by WOCs. The remainder of the variance is largely due to a change in reporting in 2017/18 which resulted in an allocation of the bad debt charge by service, to correct the underlying provision held by service. 2018/19 is therefore now a normalised charge by service received. Other unmeasured costs reduced by £0.7 million in real terms reflecting, in part, the ongoing reduction in the overall number of unmeasured customers served.

4 Measured costs increased by £1.8 million in real terms, with an increase in the bad debt charge of £0.7 million. Of the overall increase in the bad debt charge, single service customers fell by £3.0 million with dual service customers increasing by £3.8 million. Of the change in single service bad debt costs, £0.6 million is due to a one off increase in the prior year for customers billed on our behalf by WOCs. The remainder of the variance is largely due to a change in reporting in 2017/18 which required an allocation of the bad debt charge by service, to ensure the accurate level of bad debt provision held against customers receiving either a single or dual service. Debt management, customer service and other operating expenditure costs increased by £1.2 million reflecting the additional resource employed on debt collection and the underlying growth in measured customers generally.

5 Commissioning of new assets is responsible for the increases in depreciation and amortisation of retail assets from the prior year.

Capital expenditure (4F.14)

6 Household retail capital expenditure was £3.9 million, primarily for the introduction of new and enhanced information services software used within the retail business. This spend on new software is primarily responsible for the increase in amortisation of intangible retail assets from the prior year.

Table 4G - Wholesale Current Cost Financial Performance

	Line description	Water £m	Wastewater £m	Total £m
1	Revenue	473.722	700.994	**1,174.716**
2	Operating expenditure	(253.294)	(279.561)	**(532.855)**
3	Capital maintenance charges	(155.047)	(305.590)	**(460.637)**
4	Other operating income	0.618	0.588	**1.206**
5	Current cost operating profit	65.999	116.432	**182.431**
6	Other income	28.931	46.428	**75.359**
7	Interest income	1.082	1.737	**2.819**
8	Interest expense	(135.883)	(218.059)	**(353.942)**
9	Other interest expense	0.169	0.270	**0.439**
10	Current cost profit before tax and fair value movements	(39.702)	(53.192)	**(92.894)**
11	Fair value gains/(losses) on financial instruments	(37.780)	(60.627)	**(98.407)**
12	Current cost profit before tax	(77.482)	(113.819)	**(191.301)**

1 All commentary relates to the appointed business unless otherwise stated.

Capital maintenance charges (4G.3)

2 The capital maintenance charges comprise 2017/18 current cost depreciation (CCD) indexed by RPI to 2018/19, plus the change in historical cost depreciation for wholesale non infrastructure assets in the year, plus a notional Infrastructure Renewals Charge (IRC). The IRC is based on the average forecast level of capitalised infrastructure renewals expenditure over the AMP period. A detailed breakdown is shown below:

Line Description	Water £m	Wastewater £m	Total £m	Notes
Prior year current cost depreciation	117.3	257.8	375.1	Bought forward from 2017/18
Retail Price index inflation at 2.443 per cent	2.9	6.3	9.2	Per Office of National Statistics published financial year 2018/19 RPI figure
Change in historical cost depreciation 2018/19	4.6	15.5	20.0	Wholesale non-infra depreciation movement 2017/18 to 2018/19
	124.7	279.6	404.3	
Notional infrastructure renewals charge on non-expensed infrastructure renewals expenditure	30.3	26.0	56.3	Average capital maintenance infrastructure spend for AMP 6. Figures are actuals for years 1-4 and forecast for year 5
	155.0	305.6	460.6	

Other income, interest and fair value movements (4G.6-4G.9 and 4G.11)

3 Other income, interest and fair value movements are allocated between water and wastewater on the basis of closing RCV. Refer to the commentary for table 1A for year on year variance.

Table 4H - Financial Metrics

	Line description	Units	DPs	Metric	AMP to date
A	**Financial indicators**				
1	Net debt	£m	3	6,269.534	
2	Regulated equity	£m	3	1,711.809	
3	Regulated gearing	%	2	78.55%	
4	Post tax return on regulated equity	%	2	-0.70%	
5	RORE (return on regulated equity)	%	2	7.56%	7.30%
6	Dividend yield	%	2	3.59%	
7	Retail profit margin - Household	%	2	0.80%	
8	Retail profit margin - Non household	%	2	0.00%	
9	Credit rating	Text	n/a	Baa1	
10	Return on RCV	%	2	4.29%	
11	Dividend cover	dec	2	-0.77	
12	Funds from operations (FFO)	£m	3	447.798	
13	Interest cover (cash)	dec	2	3.10	
14	Adjusted interest cover (cash)	dec	2	1.61	
15	FFO/Debt	dec	2	0.07	
16	Effective tax rate	%	2	122.93%	
17	RCF	£m	3	386.262	
18	RCF/capex	dec	2	0.82	
B	**Revenue and earnings**				
19	Revenue (actual)	£m	3	1,244.018	
20	EBITDA (actual)	£m	3	636.184	
C	**Movement in RORE**				
21	Base return	%	2	5.60%	5.60%
22	Totex out / (under) performance	%	2	0.32%	1.03%
23	Retail cost out / (under) performance	%	2	0.00%	0.01%
24	ODI out / (under) performance	%	2	1.13%	0.52%
25	Financing out / (under) performance	%	2	0.50%	0.15%
26	Other factors	%	2	0.00%	0.00%
27	Regulatory return for the year	%	2	7.56%	7.30%

	Line description	Units	DPs	Metric
D	**Borrowings**			
28	Proportion of borrowings which are fixed rate	%	2	35.39%
29	Proportion of borrowings which are floating rate	%	2	6.10%
30	Proportion of borrowings which are index linked	%	2	58.51%
31	Proportion of borrowings due within 1 year or less	%	2	3.16%
32	Proportion of borrowings due in more than 1 year but no more than 2 years	%	2	5.51%
33	Proportion of borrowings due in more than 2 years but but no more than 5 years	%	2	20.86%
34	Proportion of borrowings due in more than 5 years but no more than 20 years	%	2	53.15%
35	Proportion of borrowings due in more than 20 years	%	2	17.32%

Settlement of the inter-company loan to Anglian Water Services Holdings Limited (AWSH)

1 As previously reported an inter-company loan of £1.6 billion to AWSH was settled in March 2018. This removes the associated inter-company interest receivable in AWS (£191.8 million in 2017/18) and round-trip dividend of the same amount from AWS to fund the interest, and therefore simplifies the presentation of interest and dividends in the 2018/19 AWS accounts. A number of the prior year metrics in this table were affected by the round trip dividend and interest, and a one off dividend of c. £1.6 billion paid to fund the inter-company loan repayment. In order to aid year on year comparisons we have retained the reconciliation presented in last year's APR which shows the prior year underlying metrics, as presented in the table below.

2017/18 reconciliation of table 4H to the underlying metrics

2 The table below shows the 2017/18 metrics on a reported and underlying basis to aid comparison with the 2018/19 metrics.

	Line description	Units	4H Metric	Adjustments			Underlying metric
				Round trip interest	Round trip dividend	Loan dividend	
A	**Financial indicators**						
1	Net debt	£m	6,064.835				6,064.835
2	Regulated equity	£m	1,657.375				1,657.375
3	Regulated gearing	%	78.5%				78.5%
4	Post tax return on regulated equity	%	9.2%	-12.0%	-	-	-2.8%
5	RORE (return on regulated equity)	%	7.3%				7.3%
6	Dividend yield	%	8.5%				8.5%
7	Retail profit margin - Household	%	1.5%				1.5%
8	Retail profit margin - Non household	%	0.0%				0.0%
9	Credit rating	Text	Baa1				Baa1
10	Return on RCV	%	4.2%				4.2%
11	Dividend cover	dec	2.0	(1.356)	-	-	0.6
12	Funds from operations (FFO)	£m	602.509	(192.313)	-	-	410.196
13	Interest cover (cash)	dec	27.3	(24.370)	-	-	2.9
14	Adjusted interest cover (cash)	dec	14.0	(12.490)	-	-	1.5
15	FFO/Debt	dec	0.1	(0.0)	-	-	0.1
16	Effective tax rate	%	14.1%				14.1%
17	RCF	£m	(1,333.882)	(192.313)	192.313	1,602.610	268.728
18	RCF/capex	dec	(3.0)	(0.4)	0.4	3.6	0.6

The 2017/18 ratios impacted by the removal of the internal transactions, discussed in paragraph 1, are highlighted in purple.

Net debt (4H.1)

3 The principal difference between statutory and regulatory net debt is that Ofwat's definition of regulatory net debt excludes accrued interest, fair value adjustments and issue costs. A full reconciliation between statutory and regulatory borrowings can be found in table 1E.

Regulated equity (4H.2)

4 Compared with prior year regulated equity has increased by £54.4 million to £1,711.8 million. This principally reflects the increase in RCV over the year.

Regulated gearing (4H.3)

5 Regulated gearing represents net debt per table 1E divided by year-end RCV. It has changed only marginally from the previous year.

Post tax return on regulated equity (4H.4)

6 In the previous year the return was 9.2 per cent (-2.8 per cent on an underlying basis), which included the receipt of inter-company round trip interest of £191.8 million. The inter-company interest ceased in March 2018 when the inter-company loan to Anglian Water Service Holdings Limited (AWSH) was settled. This is the principal reason for the year-on-year decline in return. A break down of the calculation for both years is shown below for information.

Line description	2018/19	2017/18
Profit before tax and fair value movements (note that prior year included £191.8m of inter-company interest received which is no longer received)	**£42.614m**	£189.824m
UK corporation tax	£(54.383)m	£(42.404)m
(Loss)/ profit after current tax (excluding fair value movements)	£(11.769)m	£147.42m
Regulated equity (average for year)	£1,684.592m	£1,600.469m
Post tax return on regulated equity %	(0.7)%	9.2%

RORE (4H.5)

7 RORE calculates the returns on a regulatory basis by reference to the notional gearing level of 62.5 per cent and average RCV for the year. The base RORE of 5.6 per cent set at the Final Determination is adjusted for the following factors net of any tax impact:

1. the company share of totex out or underperformance.

2. the company share of any out or underperformance on retail costs.

3. the impact of any ODI or SIM penalties or rewards earned in the year, even if they are not payable/receivable until the following AMP.

4. the difference between the actual interest charge (in real terms) and the allowed interest (real) on notional debt.

8 We have calculated RORE for the four years to March 2019 as 7.3 per cent (2017/18: 7.3 per cent), compared with base RORE of 5.6 per cent.

9 The table below outlines the main components of RORE:

	2019	AMP6 Cumulative
	%	%
Base RORE	5.60	5.60
Company share of totex out/underperformance	0.32	1.03
Company share of any out/underperformance on retail costs	0.00	0.01
The impact of any ODI or SIM penalties	1.13	0.52
The difference between the actual interest charge (in real terms) and the allowed interest (real) on notional debt	0.50	0.15
Calculated Annual RORE	7.56	7.30

Note- figures may not add due to rounding

10 The main contributor to the RORE in 2019 is our performance on outcome delivery incentive (ODI) service incentive mechanism (SIM). This includes an expected reward of £23 million (2012/13 prices) towards SIM for the AMP6 period. This is in line with our PR19 business plan submission.

11 The cumulative average RORE for the four years ended 31 March 2019 is 7.30 per cent.

12 The totex efficiency of £46.1million achieved in the year ending March 2019 added 0.32 per cent to the RORE. This has been adjusted for any tax implication due to these efficiencies, calculated separately for opex and capex using a consistent formula as was used in the previous years and as agreed with Ofwat. This is set out in the following table:

Base year prices	2018/19	Cumulative
	£m	£m
Allowed totex	806.6	3,368.0
Actual totex	773.8	3,044.0
Difference	32.7	324.1
Difference due to timing	-13.4	0.0
Difference due to efficiency	46.1	324.1

13 Another key component of RORE is the financing outperformance for 2018/19 of 0.5 per cent. The primary reason for this year-on-year change is the change in inflation in the current year.

Dividend yield (4H.6)

14 The reduction in dividend yield over the year is consistent with the increased regulated equity referred to above and the lower dividend paid in the year.

Retail profit margin - household and non-household (4H.7 and 4H.8)

15 Both lines 7 and 8 are Ofwat calculated cells.

16 The retail profit margins are calculated as earnings before interest and tax (after deducting wholesale charges) divided by total revenue charged to household or non-household customers respectively. Household has decreased from 1.5 per cent in the prior year to 0.8 per cent in 2018/19, reflecting lower revenue in the year following over-recovery of revenue in 2017/18, whilst the costs are similar to the previous year.

17 Non-household retail margin is 0.0 per cent as a result of the transfer of the non-household retail business in 2017/18 and our exit from the non-household retail market.

Return on RCV (4H.10)

18 Return on RCV for the year was 4.3 per cent compared with 4.2 per cent for the prior year. The slight increase is consistent with the increase in profit before interest, after current tax, compared with the prior year, partially offset by the increase in average RCV.

Dividend cover (4H.11)

19 Dividend cover has decreased from 2.0 (0.6 on an underlying basis) last year to (0.77) this year. The primary reason for the decrease is the fair value loss on derivatives in the current year of £98.4 million (2018: gain of £117.6 million) which results in a loss being reported for the appointed business in line 1A.14, compared with a profit last year.

Funds from operations (4H.12)

20 FFO is net cash generated from operating activities adjusted to remove the changes in working capital. Ofwat acknowledge that their approach to calculating this differs from some of the methodologies applied by the credit rating agencies.

21 FFO for the year was £447.8 million compared with £602.5 million for the prior year (£410.2 million on an underlying basis). The decrease is due principally to the increase in net interest payments in the year following the cessation of inter-company interest receipts as explained at the start of this table commentary. On an underlying basis (i.e. with prior year excluding inter-company interest received) the FFO has improved, principally due to stronger cash generated from operations.

Interest cover (cash) (4H.13)

22 Interest cover (cash) equals to FFO as calculated above plus interest paid on borrowings, divided by interest paid on borrowings. Interest paid on borrowings excludes any accretion of interest-linked debt which is a non cash item.

23 The interest cover ratio for the year was 3.1 compared with 27.3 for the prior year (2.9 on an underlying basis). This decrease is a result of the cessation of the inter-company interest received, as described at the start of this table commentary. On an underlying basis the metric has improved marginally due to the higher FFO.

Adjusted interest cover (cash) (4H.14)

24 Adjusted interest cover (cash) adjusts for regulatory depreciation of £317.3 million (2018: 304.9 million) as published by Ofwat.

25 The cover ratio for the year was 1.6 compared with 14.0 for the prior year (1.5 on an underlying basis). This decrease is a result of the cessation of the inter-company interest received, as described at the start of this table commentary. On an underlying basis the metric has improved slightly as a result of the higher FFO.

FFO/debt (4H.15)

26 The ratio for 2018/19 is 0.07 compared with 0.13 for the prior year. This reflects the increased FFO, more than offset by the increased net debt in the current year.

27 As noted above, Ofwat acknowledges that its approach to calculating FFO/debt differs from some of the methodologies applied by the credit rating agencies.

Effective tax rate (4H.16)

28 Effective tax rate is the current tax charge for the appointed business as a percentage of the profit before tax and fair value movements for the appointed business, as set out in the table to follow.

29 The rate for 2018/19 was 122.9 per cent compared with 22.7 per cent in the prior year. The prior year figure of 22.7 per cent differs to that published in the 2017/18 APR. This has been updated to reflect the current year Ofwat methodology to allow meaningful comparisons to be drawn, the published prior year figure can be seen in the reconciliation at the start of the 4H commentary. This dramatic increase arises because the Profit before tax last year was higher as it included £191.8 million of interest received on an intra-group loan that was repaid on 29 March 2018 and therefore not included in this year. The tax charge for this year also includes a transitional adjustment arising on the adoption of IFRS15 which was not included last year. The "Group relief utilised" shown in the prior year relates to losses surrendered from the other party to the intra-group loan for which no payment was required. This is the loan that was repaid on 29 March 2018 and therefore has no impact on the effective tax rate for the current year.

	2018/19 **£m**	**2017/18** **£m**
(Loss) / Profit before tax per the Annual Performance Report	(55.8)	307.4
Fair value (loss)/profit on derivatives included in Profit before tax	(98.4)	117.5
Profit excluding Fair value (loss)/profit on derivatives (A)	42.6	189.9
Corporation tax charged at 19% (2017-18: 19%)	8.1	36.1
Depreciation and amortisation	49.5	47.1
Capital allowances	(34.5)	-
Items not taxable	(0.2)	(1.6)
Items not deductible for tax purposes	2.3	2.1
Short-term timing differences	(10.4)	(4.1)
Transitional adjustment of adoption of IFRS 15	37.6	-
Group relief utilised	-	(36.4)
Current tax charge for the year before adjustments in respect of previous years (B)	52.4	43.2
Adjustments in respect of previous years	2.0	(0.8)
Current tax charge for the year after adjustments in respect of previous years	54.4	42.4
Effective tax rate (B/A)	122.9%	22.7%

Regulated free cash flow (4H.17)

30 Free cash flow for the year was £386.3 million compared with £(1,333.9) million for the prior year (£268.7 million on an underlying basis). The increase results from last year including round-trip dividends of £192.3 million, a one off dividend to fund an inter-company loan payment of c. £1.6 billion, and a special dividend of £62.2 million to fund the transfer of the non-household retail business. None of these prior year dividends was repeated in the current year, hence the improvement. On an underlying basis this measure has improved as a results of the higher FFO as discussed above, and a reduction in the dividends paid up to Group.

RCF/capex (4H.18)

31 The ratio for the year was 0.82 compared with the prior year of (3.0) and 0.6 on an equivalent underlying basis. The increase in ratio on both the underlying and unadjusted bases is due principally to the higher regulated free cash flow referred to above.

Revenue and EBITDA (4H.19 and 4H.20)

32 EBITDA (earnings before interest, tax, depreciation and amortisation) is calculated using the price control revenue as set out in table 4H and the associated costs. It includes only amounts which are relevant to the price control.

33 Revenue is higher than prior year due to regulatory price increases, and the impact of the hot, dry summer in 2018 which increased demand. EBITDA is lower than last year due to revenue increases being more than offset by increased opex as explained in the commentaries for tables 1A and 2A.

Borrowings (4H.28-4H.35)

34 The Group's policy for the management of interest rate risk is to achieve a balanced mix of funding at index-linked, fixed and floating rates of interest. To guard against the adverse movements in interest rates having a detrimental impact on the business and to enable covenanted obligations and credit ratings to be met, the overall underlying debt portfolio is maintained at circa 50% of RCV for index-linked debt and between 5 per cent and 15 per cent for floating rate debt, with the remaining being fixed rate debt. Within these hedging levels, the Group endeavours to obtain the finest rates (lowest borrowing and finest depositing rates) consistent with ensuring that the relevant treasury objectives are met in full, i.e. the provision of adequate finance for Anglian Water Services at all times and maintaining security of principal.

35 The proportion of borrowings split between fixed and floating remains broadly in line with the prior year which reflects the continuation of the business' funding policy detailed above. This year we have been pursuing opportunities to improve financeability headroom, notably through CPI inflation linked debt and swaps which is indicative of our proportional increase in index-linked borrowings. Whilst we have raised more fixed rate debt in the year, the larger debt balance overall compared to prior year means this is not reflected in an increase in the proportion of fixed debt.

36 The maturity profile in the medium to long term has remained broadly consistent, with the borrowings managed to access a diversified investor group and to avoid significant concentrations of refinancing. No more than 20 per cent of the Group's refinancing requirement will fall due in any 24 month period and no more than 40 per cent within any 5 year period.

37 The reduction in amounts due in one year or less is due to the natural timing of debt maturities and amortisation schedule.

Table 4I - Financial Derivatives

	Line description	Nominal value by maturity (net)			Total value at 31 March 2019		Total accretion at 31 March 2019	Interest rate (weighted average for 12 months to 31 March 2019)	
		1 to 2 years	2 to 5 years	Over 5 years	Nominal value (net)	Mark to Market		Payable	Receivable
		£m	£m	£m	£m	£m	£m	%	%
	Derivative type								
A	**Interest rate swap (sterling)**								
1	Floating to fixed rate	-	372.251	387.813	760.064	(179.120)	-	4.71%	1.36%
2	Floating from fixed rate	-	161.700	893.332	1,055.032	50.100	-	0.89%	2.15%
3	Floating to index linked	-	25.000	540.931	565.931	(607.039)	**(31.842)**	2.63%	1.25%
4	Floating from index linked	-	-	-	-	-	-	0.00%	0.00%
5	Fixed to index-linked	-	-	615.000	615.000	(110.328)	-	1.17%	3.54%
6	Fixed from index-linked	-	-	-	-	-	-	0.00%	0.00%
7	**Total**	-	558.951	2,437.076	2,996.027	(846.387)	**(31.842)**		
B	**Foreign Exchange**								
8	Cross currency swap USD	-	-	-	-	-	-	0.00%	0.00%
9	Cross currency swap EUR	-	-	-	-	-	-	0.00%	0.00%
10	Cross currency swap YEN	-	-	-	-	-	-	0.00%	0.00%
11	Cross currency swap Other	-	-	-	-	-	-	0.00%	0.00%
12	**Total**	-	-	-	-	-	-		
C	**Currency interest rate**								
13	Currency interest rate swaps USD	-	600.593	144.319	744.912	145.298	-	3.33%	4.55%
14	Currency interest rate swaps EUR	-	-	-	-	-	-	0.00%	0.00%
15	Currency interest rate swaps YEN	25.081	-	-	25.081	9.788	-	2.08%	3.22%
16	Currency interest rate swaps Other	-	-	-	-	-	-	0.00%	0.00%
17	**Total**	25.081	600.593	144.319	769.993	155.086	-		
D	**Forward currency contracts**								
18	Forward currency contracts USD	-	-	-	-	-	-	0.00%	0.00%
19	Forward currency contracts EUR	-	-	-	-	-	-	0.00%	0.00%
20	Forward currency contracts YEN	-	-	-	-	-	-	0.00%	0.00%
21	Forward currency contracts CAD	-	-	-	-	-	-	0.00%	0.00%
22	Forward currency contracts AUD	-	-	-	-	-	-	0.00%	0.00%
23	Forward currency contracts HKD	-	-	-	-	-	-	0.00%	0.00%
24	Forward currency contracts Other	-	-	-	-	-	-	0.00%	0.00%
25	**Total**	-	-	-	-	-	-	-	-
E	**Other financial derivatives**								
26	Other financial derivatives	40.190	137.643	583.357	761.191	(89.196)	-	3.72%	2.35%
F	**Total**								
27	Total financial derivatives	65.272	1,297.187	3,164.752	4,527.211	(780.497)	**(31.842)**		

Floating to fixed rate (4I.1)

1 The nominal value is the face value of the financial instruments, these instruments are marked to market at the end of each reporting period and reported in the balance sheet at their fair value. The total of financial instruments in Table 1C of £780.5 million agrees to the table due to the inclusion of £0.9 million of energy hedges which relate to the risk management of the businesses operating costs. Whilst this does not strictly relate to financing obligations, the positions have been included based on the RAG guidance document which stipulates power as an example of other financial derivatives.

Anglian Water has a number of interest rate derivatives. During the year we have restructured an element of our pay fixed receive floating swaps to be linked to CPI (£100 million). A further £175 million reduction is seen where we have closed out some perfectly offsetting swaps with Lloyds – the other side of the movement is seen in the floating from fixed rate detail below. Further movement of £362.5 million is the result of pre-hedge positions being locked in and therefore transferring to other financial derivatives below.

Receivable weighted average interest rates have increased marginally year on year as a result of average LIBOR rates increasing year on year by circa 20 basis points.

Payable weighted average interest rates have increased year on year due to the offsetting swaps being closed out which were at an average lower rate than other swaps in this classification.

Floating from fixed rate (4I.2)

The movement of just over £100m notional in this category is reflecting a new swap for £73.3 million and the cancellation of £175 million of offsetting positions outlined above.

The increase in 12 basis points on the weighted average payable interest rates is partly due to the effect of the new swap which has a weighted average pay rate of 3.94 per cent which represents the higher cost of the synthetic debt solution in comparison to the original yen trade. In addition, LIBOR rates have increased year on year.

The decrease in weighted average receivable rates is due to the full year effect seen on the green bond transaction executed in 2017, which was swapped to floating, where the receive fixed legs have a weighted average interest rate of circa 1.1 per cent. This was done at a time where the receive rates achieved were low thereby bringing down the overall average.

Floating to index linked (4I.3)

There has been no significant change in the floating to index linked notional in the current year.

Weighted average interest rates payable for index linked debt remained the same. Rates receivable have increased marginally by 13bps to reflect the full year of the increase in 3 and 6 month LIBORS.

Fixed to index linked (4I.5)

With uncertainty regarding the future of LIBOR, a number of index-linked swaps have been entered into helping to prevent future exposures.

Currency interest rate swaps USD / YEN (4I.13-4I.16)

The movement in the Yen cross currency interest rate swaps of £65.931 million is relating to the maturity in the year of the 15 billion bond. The interest rates have shifted to reflect the remaining yen swap which matures in 2019.

The only change to our USD swaps was a new issuance for USD 53 million.

Other financial derivatives (4I.23)

Other financial derivatives include electricity hedges and fixed to fixed interest rate swaps. The rates quoted are the fixed rates on the swaps.

During AMP 6, due to the Directors' concern regarding the potential for rising interest rates, a number of pre-hedges were entered into. The receivable rate on other interest rate derivatives has marginally increased due to the timing of pre-issuance hedges locking in for the current year where the prior year did not include a full year.

Assumptions:

2 For forward starting derivatives the LIBOR rate as at 31 March 2019 has been used for calculations.

3 The Group holds derivative financial instruments which contain more than 2 legs (i.e. multiple pay and receive legs). In legal terms these form a single contract but these have been split to reflect the relevant risks implied. Where the risks could be consolidated (i.e. pay RPI receive floating) this has been done to best reflect the net impact of the instruments.

4 The Mark to Market position is the full fair value of the positions with the total accretion column representing the accretion component of this full amount.

Table 4J - Atypical Expenditure - Wholesale Water

	Line description	Water resources		Network+				Total
		Abstraction licences	Raw water abstraction	Raw water transport	Raw water storage	Water treatment	Treated water distribution	
		£m	£m	£m	£m	£m	£m	£m
A	**Operating expenditure (excl. atypicals)**							
1	Power	-	9.342	4.124	0.266	8.275	16.570	**38.577**
2	Income treated as negative expenditure	-	(0.224)	(0.110)	(0.022)	(0.240)	(0.550)	**(1.146)**
3	Abstraction charges/ discharge consents	9.946	-	-	-	0.545	-	**10.491**
4	Bulk supply	-	-	-	-	2.145	-	**2.145**
5	Other operating expenditure							
6	- Renewals expensed in year (Infrastructure)	-	-	-	-	-	34.788	**34.788**
7	- Renewals expensed in year (Non-Infrastructure)	-	-	-	-	-	-	**-**
8	- Other operating expenditure excluding renewals	-	13.620	2.895	0.113	27.184	72.746	**116.558**
9	Local authority and Cumulo rates	-	3.043	0.482	-	5.988	31.464	**40.977**
10	Total operating expenditure (excluding third party services)	9.946	25.781	7.391	0.357	43.897	155.018	**242.390**
10	Third party services	0.591	1.775	1.882	-	3.279	3.377	**10.904**
11	Total operating expenditure	10.537	27.556	9.273	0.357	47.176	158.395	**253.294**
B	**Capital expenditure (excl. atypicals)**							
12	Maintaining the long term capability of the assets - infra	-	0.558	0.502	-	-	28.234	**29.294**
13	Maintaining the long term capability of the assets - non-infra	-	4.310	-	0.084	26.432	30.586	**61.412**
14	Other capital expenditure - infra	-	1.098	0.682	-	-	34.216	**35.996**
15	Other capital expenditure - non-infra	-	4.271	0.062	-	27.718	5.582	**37.633**
16	Infrastructure network reinforcement	-	-	-	-	-	20.144	**20.144**
17	Total gross capital expenditure excluding third party services	-	10.237	1.246	0.084	54.151	118.762	**184.479**
18	Third party services	-	-	-	-	0.251	3.064	**3.314**
19	Total gross capital expenditure	-	10.237	1.246	0.084	54.401	121.825	**187.794**
20	Grants and contributions	-	-	-	-	-	32.438	**32.438**
21	Totex	10.537	37.793	10.519	0.441	101.577	247.782	**408.650**
C	**Cash expenditure (excl. atypicals)**							
22	Pension deficit recovery payments	-	0.476	0.118	-	1.427	2.377	**4.398**
23	Other cash items	-	-	-	-	-	-	**-**
24	Totex including cash items	10.537	38.269	10.637	0.441	103.004	250.159	**413.048**

Line description	Water resources		Network+				Total
	Abstraction licences	Raw water abstraction	Raw water transport	Raw water storage	Water treatment	Treated water distribution	
	£m	£m	£m	£m	£m	£m	£m
D Atypical expenditure							
35 Total atypical expenditure	-	-	-	-	-	-	**-**
E Total expenditure							
36 Total expenditure	10.537	38.269	10.637	0.441	103.004	250.159	**413.048**

1 Lines 28 to 34 were additional lines available for companies to use if required. As we have not used these lines they have not been included in the above table.

Operating expenditure (4J.1-4J.11)

2 Please refer to our commentary covering table 4D for an explanation of operating expenditure.

Capital expenditure (4J.12-4J.21)

3 Anglian Water has no atypical capital expenditure in 2018/19.

Cash expenditure (4J.22-4J.24)

4 Please refer to our commentary covering table 4D for an explanation of cash expenditure.

Atypical expenditure (4J.25-4J.35)

5 We are not treating any expenditure as atypical in the year; whilst a significant amount of the increase in cost during the year is attributable to maintaining service following the 'Beast from the East' and the hot, dry summer, we have not classified these costs as atypical. Dealing with the favourable or adverse impact arising from changes in the weather forms part of our day-to-day operations and establishing a 'normal' or base year against which to judge costs as atypical is therefore impractical.

6 We interpret atypical expenditure items (defined in RAG4.08 as unusual items outside ordinary activities) as the type of expenditure which would be classified as exceptional in our statutory accounts, such as major one-off business reorganisations. We had no such expenditure in the year.

Table 4K - Atypical Expenditure - Wholesale Wastewater

Line description	Network+ Sewage Collection			Network+ Sewage Treatment		Sludge			Total
	Foul	Surface water drainage	Highway drainage	Sewage treatment and disposal	Sludge liquor treatment	Sludge transport	Sludge treatment	Sludge disposal	
	£m	£m	£m	£m	£m	£m	£m	£m	£m
A Operating expenditure (excl. atypicals)									
1 Power	7.465	2.298	1.059	27.365	1.660	-	(0.595)	-	39.295
2 Income treated as negative expenditure	(0.179)	(0.055)	(0.025)	(0.907)	-	-	(7.344)	(2.274)	(10.784)
3 Discharge Consents	1.682	0.518	0.239	5.957	0.140	-	0.244	-	8.780
4 Bulk discharge	-	-	-	-	-	-	-	-	-
Other operating expenditure									
5 - Renewals expensed in year (Infrastructure)	13.485	4.317	2.000	-	-	-	-	-	19.802
6 - Renewals expensed in year (Non-Infrastructure)	-	-	-	-	-	-	-	-	-
7 - Other operating expenditure excluding renewals	37.031	11.880	5.784	72.230	4.468	23.215	31.904	10.627	197.139
8 Local authority and Cumulo rates	0.098	0.030	0.014	19.744	1.083	0.059	3.136	0.024	24.188
9 Total operating expenditure (excluding third party services)	59.582	18.988	9.071	124.389	7.351	23.317	27.345	8.377	278.420
10 Third party services	-	-	-	0.729	-	0.016	0.356	0.040	1.141
11 Total operating expenditure	59.582	18.988	9.071	125.118	7.351	23.333	27.701	8.417	279.561
B Capital expenditure (excl. atypicals)									
12 Maintaining the long term capability of the assets - infra	14.007	4.484	2.077	0.001	0.000	-	-	-	20.570
13 Maintaining the long term capability of the assets - non-infra	12.888	4.126	1.912	83.588	4.399	1.600	14.230	1.282	124.025
14 Other capital expenditure - infra	13.580	4.347	2.014	-	-	-	-	-	19.941
15 Other capital expenditure - non-infra	18.552	5.939	2.752	41.267	2.172	-	2.086	-	72.768
16 Infrastructure network reinforcement	4.417	1.414	0.655	-	-	-	-	-	6.487
17 Total gross capital expenditure excluding third party services	63.446	20.310	9.410	124.856	6.571	1.600	16.316	1.282	243.791
18 Third party services	3.023	0.968	0.448	0.050	0.003	-	-	-	4.492
19 Total gross capital expenditure	66.469	21.278	9.858	124.906	6.574	1.600	16.316	1.282	248.283
20 Grants and contributions	13.572	4.345	2.013	-	-	-	-	-	19.930
21 Totex	112.479	35.921	16.916	250.024	13.925	24.933	44.017	9.699	507.914
C Cash expenditure (excl. atypicals)									
22 Pension deficit recovery payments	1.418	0.387	0.128	2.835	0.128	0.902	0.645	0.387	6.830
23 Other cash items	-	-	-	-	-	-	-	-	-
24 Totex including cash items	113.897	36.308	17.044	252.859	14.053	25.835	44.662	10.086	514.744

Line description	Network+ Sewage Collection			Network+ Sewage Treatment		Sludge			Total
	Foul	Surface water drainage	Highway drainage	Sewage treatment and disposal	Sludge liquor treatment	Sludge transport	Sludge treatment	Sludge disposal	
	£m	£m	£m	£m	£m	£m	£m	£m	£m

D Atypical expenditure

35	Total atypical expenditure	-	-	-	-	-	-	-	-	-

E Total expenditure

36	Total expenditure	113.897	36.308	17.044	252.859	14.053	25.835	44.662	10.086	514.744

1 Lines 29 to 34 were additional lines available for companies to use if required. As we have not used these lines they have not been included in the above table.

Operating expenditure (4K.1-4K.11)

2 Please refer to our commentary covering table 4E for an explanation of operating expenditure.

Capital expenditure (4K.12-4K.21)

3 Anglian Water has no atypical capital expenditure in 2018/19.

Cash expenditure (4K.22-4K.24)

4 Please refer to our commentary covering table 4E for an explanation of cash expenditure.

Atypical expenditure (4K.25-4K.35)

5 We are not treating any expenditure as atypical in the year.

6 We interpret atypical expenditure items (defined in RAG4.08 as unusual items outside ordinary activities) as the type of expenditure which would be classified as exceptional in our statutory accounts, such as major one-off business reorganisations. We had no such expenditure in the year.

Table 4L - Enhancement Capital Expenditure - Wholesale Water

Line description	Expenditure in report year							Cumulative expenditure on schemes completed in the report year						
	Water resources		Network+				Total	Water resources		Network+				Total
	Abstraction licences	Raw water abstraction	Raw water transport	Raw water storage	Water treatment	Treated water distribution		Abstraction licences	Raw water abstraction	Raw water transport	Raw water storage	Water treatment	Treated water distribution	
	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
A	**Enhancement expenditure by purpose**													
1	NEP - Making ecological improvements at abstractions (Habitats Directive, SSSI, NERC, BAPs)	-	0.065	-	-	-	-	**0.065**	-	-	-	-	-	-	**-**
2	NEP - Eels Regulations (measures at intakes)	-	2.596	-	-	-	-	**2.596**	-	0.988	-	-	-	-	**0.988**
3	NEP - Invasive Non Native Species	-	-	-	-	-	-	**-**	-	-	-	-	-	-	**-**
4	Addressing low pressure	-	-	-	-	-	0.770	**0.770**	-	-	-	-	-	-	**-**
5	Improving taste / odour / colour	-	-	-	-	-	-	**-**	-	-	-	-	-	-	**-**
6	Meeting lead standards	-	-	-	-	0.295	0.782	**1.077**	-	-	-	-	0.029	0.782	**0.811**
7	Supply side enhancements to the supply/demand balance (dry year critical / peak conditions)	-	-	-	-	-	-	**-**	-	-	-	-	-	-	**-**
8	Supply side enhancements to the supply/demand balance (dry year annual average conditions)	-	0.096	0.091	-	(0.371)	11.046	**10.862**	-	-	-	-	-	15.650	**15.650**
9	Demand side enhancements to the supply/demand balance (dry year critical / peak conditions)	-	-	-	-	-	-	**-**	-	-	-	-	-	-	**-**
10	Demand side enhancements to the supply/demand balance (dry year annual average conditions)	-	-	-	-	-	-	**-**	-	-	-	-	-	-	**-**
11	New developments	-	-	-	-	-	27.597	**27.597**	-	-	-	-	-	24.116	**24.116**
12	New connections element of new development (CPs, meters)	-	-	-	-	-	12.005	**12.005**	-	-	-	-	-	12.005	**12.005**
13	Investment to address raw water deterioration (THM, nitrates, Crypto, pesticides, others)	-	(0.023)	-	-	1.916	-	**1.893**	-	-	-	-	0.008	-	**0.008**

	Line description	Expenditure in report year							Cumulative expenditure on schemes completed in the report year						
		Water resources		Network+				Total	Water resources		Network+				Total
		Abstraction licences	Raw water abstraction	Raw water transport	Raw water storage	Water treatment	Treated water distribution		Abstraction licences	Raw water abstraction	Raw water transport	Raw water storage	Water treatment	Treated water distribution	
		£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
A	**Enhancement expenditure by purpose**														
14	Resilience	-	0.024	0.653	-	5.924	2.284	**8.885**	-	-	-	-	2.784	0.703	**3.487**
15	SEMD	-	(0.185)	-	-	3.353	0.941	**4.109**	-	-	-	-	1.770	1.640	**3.410**
16	NEP - Drinking Water Protected Areas (schemes)	-	0.057	-	-	-	-	**0.057**	-	0.057	-	-	-	-	**0.057**
17	NEP - Water Framework Directive measure	-	-	-	-	-	-	**-**	-	-	-	-	-	-	**-**
18	NEP - Investigations	-	0.658	-	-	0.932	-	**1.590**	-	0.658	-	-	0.932	-	**1.590**
19	Improvements to river flows	-	2.124	-	-	15.881	1.107	**19.112**	-	-	-	-	-	-	**-**
20	Metering (excluding cost of providing metering to new service connections) - meters requested by optants	-	-	-	-	-	1.994	**1.994**	-	-	-	-	-	1.957	**1.957**
21	Metering (excluding cost of providing metering to new service connections)- meters introduced by companies	-	-	-	-	-	1.064	**1.064**	-	-	-	-	-	1.064	**1.064**
22	Metering (excluding cost of providing metering to new service connections) - other	-	-	-	-	-	0.308	**0.308**	-	-	-	-	-	0.308	**0.308**
38	**Total enhancement capital expenditure**	-	5.412	0.744	-	27.930	59.898	**93.984**	-	1.703	-	-	5.523	58.225	**65.451**

1 Lines 23 to 37 were additional lines available for companies to use if required. As we have not used these lines they have not been included in the above table.

Enhancement expenditure by purpose (4L.1-4L.38)

2 Figures in this table are at price of the day.

3 The above table includes £0.2 million of enhancement capital expenditure in relation to third-party agreements at the Wing and Grafham water treatment works. This spend is included within the third party services capex of £3.3 million in table 4D.

4 The source of the data is the project systems module of our SAP business management system. Each project holds as part of its master data Business Investment Category (BIC) codes which indicate the Ofwat categories of enhancement and maintenance, infrastructure and non infrastructure, and also align with accounting separation categories. The codes are mapped to their relevant lines in the table.

5 Some credits have occurred due to movements and payments to contractors for pain and gain share which are only confirmed when a project is final accounted.

6 Supply- and demand-side schemes that deliver enhancements to the supply/demand balance dry year average conditions may also contribute to critical/peak conditions enhancements. As the primary driver of the spend, we have allocated all expenditure to the dry year average lines (lines 7 and 9).

7 We record expenditure in the year in which it is incurred, which means that for many schemes expenditure is spread over a number of years. In contrast, we record outputs in the year that schemes are commissioned. This means that in some years we may show expenditure without any apparent output.

8 Some major schemes are currently in construction which have large amounts of expenditure but have not yet achieved output, of note; Norwich Sustainability Reduction with excess of £16 million of expenditure in 2018/19.

9 On certain schemes we will incur additional expenditure on schemes where the output has been claimed in a prior year. Such spend includes additional landscaping, ancillary asset, telemetry and compensation costs and has been excluded from table 4L. The below table outlines the expenditure incurred in 2018/19 on schemes for which outputs have previously been claimed.

Line	Raw water abstraction	Treated water distribution	Water treatment	Grand Total
Addressing low pressure	-	0.239	-	0.239
Investment to address raw water deterioration (THM nitrates Crypto pesticides others)	0.034	-	1.031	1.066
Meeting lead standards	-	-	(0.263)	(0.263)
NEP - Eels Regulations (measures at intakes)	(0.555)	-	-	(0.555)
New developments	-	0.123	-	0.123
Resilience	0.004	0.008	0.017	0.030
SEMD	-	-	0.100	0.100
Supply side enhancements to the supply/demand balance (dry year annual average conditions)	-	2.497	-	2.497
Grand Total	(0.517)	2.868	0.885	3.236

Table 4M - Enhancement Capital Expenditure - Wholesale Wastewater

Line description	Expenditure in report year									Cumulative expenditure on schemes completed in the report year								
	Network+Sewage Collection			Network+Sewage Treatment		Sludge			Total	Network+Sewage Collection			Network+Sewage Treatment		Sludge			Total
	Foul	Surface water drainage	Highway drainage	Sewage treatment and disposal	Sludge liquor treatment	Sludge transport	Sludge treatment	Sludge disposal		Foul	Surface water drainage	Highway drainage	Sewage treatment and disposal	Sludge liquor treatment	Sludge transport	Sludge treatment	Sludge disposal	
	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
A	**Enhancement capital expenditure by purpose**																	
1	First time sewerage (s101A)	13.742	-	-	0.210	-	-	-	-	**13.952**	51.650	-	-	6.868	-	-	-	-	**58.518**
2	Sludge enhancement (quality)	-	-	-	-	-	-	2.001	-	**2.001**	-	-	-	-	-	-	0.203	-	**0.203**
3	Sludge enhancement (growth)	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	**-**
4	NEP - Conservation drivers	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	**-**
5	NEP - Eels Regulations (measures at outfalls)	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	**-**
6	NEP - Event Duration Monitoring at intermittent discharges	4.481	-	-	-	-	-	-	-	**4.481**	2.019	-	-	-	-	-	-	-	**2.019**
7	NEP - Flow monitoring at sewage treatment works	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	**-**
8	NEP - Monitoring of pass forward flows at CSOs	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	**-**
9	NEP - Schemes to increase flow to full treatment	-	-	-	(0.006)	-	-	-	-	**(0.006)**	-	-	-	-	-	-	-	-	**-**
10	NEP - Schemes to increase storm tank capacity	-	-	-	0.041	-	-	-	-	**0.041**	-	-	-	-	-	-	-	-	**-**
11	NEP - Storage schemes to reduce spill frequency at CSOs, storm tanks, etc	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	**-**
12	NEP - Chemicals monitoring/ investigations/ options appraisals	-	-	-	0.782	-	-	-	-	**0.782**	-	-	-	-	-	-	-	-	**-**
13	NEP - National phosphorus removal technology investigations	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	**-**

	Line description	Expenditure in report year								Cumulative expenditure on schemes completed in the report year							
		Network+Sewage Collection			Network+Sewage Treatment		Sludge			Total	Network+Sewage Collection			Network+Sewage Treatment		Sludge			Total
		Foul	Surface water drainage	Highway drainage	Sewage treatment and disposal	Sludge liquor treatment	Sludge transport	Sludge treatment	Sludge disposal		Foul	Surface water drainage	Highway drainage	Sewage treatment and disposal	Sludge liquor treatment	Sludge transport	Sludge treatment	Sludge disposal	
		£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
A	**Enhancement capital expenditure by purpose**																		
14	NEP - Groundwater schemes	-	-	-	0.777	-	-	-	-	**0.777**	-	-	-	-	-	-	-	-	**-**
15	NEP - Investigations	0.292	-	-	-	-	-	-	-	**0.292**	0.292	-	-	-	-	-	-	-	**0.292**
16	NEP - Nutrients (N removal)	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	**-**
17	NEP - Nutrients (P removal at activated sludge STWs)	-	-	-	4.116	-	-	-	-	**4.116**	-	-	-	-	-	-	-	-	**-**
18	NEP - Nutrients (P removal at filter bed STWs)	-	-	-	14.518	-	-	-	-	**14.518**	-	-	-	-	-	-	-	-	**-**
19	NEP - Reduction of sanitary parameters	-	-	-	7.572	-	-	-	-	**7.572**	-	-	-	36.397	-	-	-	-	**36.397**
20	NEP - UV disinfection (or similar)	0.173	-	-	(0.156)	-	-	-	-	**0.017**	-	-	-	-	-	-	-	-	**-**
21	NEP - Discharge relocation	-	-	-	1.848	-	-	-	-	**1.848**	-	-	-	-	-	-	-	-	**-**
22	NEP - Flow 1 schemes	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	**-**
23	Odour	0.187	-	-	0.327	-	-	0.085	-	**0.599**	0.008	-	-	0.442	-	-	-	-	**0.450**
24	New development and growth	20.329	-	-	-	-	-	-	-	**20.329**	26.185	-	-	-	-	-	-	-	**26.185**
25	Growth at sewage treatment works (excluding sludge treatment)	-	-	-	13.846	-	-	-	-	**13.846**	-	-	-	22.824	-	-	-	-	**22.824**
26	Resilience	-	-	-	0.115	-	-	-	-	**0.115**	-	-	-	-	-	-	-	-	**-**
27	SEMD	-	-	-	(0.502)	-	-	-	-	**(0.502)**	-	-	-	0.044	-	-	-	-	**0.044**
28	Reduce flooding risk for properties	1.899	-	-	-	-	-	-	-	**1.899**	4.707	-	-	-	-	-	-	-	**4.707**
29	Transferred private sewers and pumping stations	12.568	-	-	-	-	-	-	-	**12.568**	18.427	-	-	-	-	-	-	-	**18.427**
45	**Total enhancement capital expenditure**	53.671	-	-	43.488	-	-	2.086	-	**99.245**	103.290	-	-	66.576	-	-	0.203	-	**170.069**

1 Lines 30 to 44 were additional lines available for companies to use if required. As we have not used these lines they have not been included in the above table.

Enhancement capital expenditure by purpose (4M.1-4M.45)

2 This is Enhancement expenditure for wholesale Wastewater services, and is stated at price of the day.

3 The above table includes £0.05 million of enhancement capital expenditure in relation to third-party agreements at Chalton and Doddinghurst water recycling centres. This spend is included within the third party services capex of £4.5 million in table 4E.

4 The source of the data is the project systems module of our SAP business management system. Each project holds as part of its master data Business Investment Category (BIC) codes which indicate the Ofwat categories of enhancement and maintenance, infrastructure and non infrastructure, and also align with accounting separation categories. The codes are mapped to their relevant lines in the table.

5 We record expenditure in the year in which it is incurred, which means that for many schemes expenditure is spread over a number of years. In contrast, we record outputs in the year that schemes are commissioned. This means that in some years we may show expenditure without any apparent output.

6 Some credits have occurred due to movements and payments to contractors for pain and gain share which are only confirmed when a project is final accounted.

7 An allocation was required for the foul, surface water drainage and highway drainage split. The allocation was based on flow estimate models provided by Anglian Water's modelling team.

8 An allocation was also required for the sewage treatment and disposal and the imported sludge liquor treatment. This allocation is based on a population equivalent calculation.

9 On certain schemes we will incur additional expenditure on schemes where the output has been claimed in a prior year. Such spend includes additional landscaping, ancillary asset, telemetry and compensation costs and has been excluded from table 4M. The table below outlines the expenditure incurred in 2018/19 on schemes for which outputs have previously been claimed.

Line	Collection	Sewage treatment and disposal	Sludge treatment	Grand Total
First time sewerage (s101A)	0.42	-	-	0.42
Growth at sewage treatment works (excluding sludge treatment)	-	1.11	-	1.11
NEP - Chemicals monitoring/ investigations/ options appraisals	-	0.00	-	0.00
NEP - Event Duration Monitoring at intermittent discharges	2.60	-	-	2.60
NEP - Nutrients (P removal at activated sludge STWs)	-	2.75	-	2.75
NEP - Nutrients (P removal at filter bed STWs)	-	4.85	-	4.85
NEP - Reduction of sanitary parameters	-	10.43	-	10.43
NEP - UV disinfection (or similar)	0.03	-	-	0.03
New development and growth	1.35	-	-	1.35
Reduce flooding risk for properties	1.22	-	-	1.22
Resilience	-	0.08	-	0.08
SEMD	-	0.01	-	0.01
Sludge enhancement (quality)	-	-	0.01	0.01

Line	Collection	Sewage treatment and disposal	Sludge treatment	Grand Total
NEP - Discharge relocation	-	1.848	-	1.848
Grand Total	5.63	21.09	0.01	26.73

Table 4N - Operating Expenditure - Sewage Treatment

	Line description	Network+ £000
A	**Costs of STWs in size bands 1 to 5**	
1	Direct costs of STWs in size band 1	3,679
2	Direct costs of STWs in size band 2	3,048
3	Direct costs of STWs in size band 3	9,448
4	Direct costs of STWs in size band 4	18,582
5	Direct costs of STWs in size band 5	12,374
6	General & support costs of STWs in size bands 1 to 5	11,375
7	Functional expenditure of STWs in size bands 1 to 5	58,506
B	**Costs of STWs in size band 6**	
8	Service charges for STWs in size band 6	1,251
9	Estimated terminal pumping costs size band 6 works	3,267
10	Other direct costs of STWs in size band 6	37,463
11	Direct costs of STWs in size band 6	41,981
12	General & support costs of STWs in size band 6	10,426
13	Functional expenditure of STWs in size band 6	52,407
14	**Total Functional expenditure for Sewage treatment**	110,913

Network +

1 This column includes total sewage treatment operating expenditure excluding 3rd Party costs and business rates. Total sewage treatment operating expenditure includes both Sewage treatment and Sludge liquor treatment (Table 4E Network + sewage treatment).

Direct costs of STWs in size bands 1 to 5 (4N.1-4N.5)

2 Direct sewage treatment costs are captured by individual cost centres for Water Recycling Centres where possible using our general ledger costing system (SAP). Allocations are used to split power costs between sludge and sewage treatment activities with further allocations employed for service charges, shared costs and non specific site costs including direct management. Water Recycling Centres are grouped into their respective site bands (1 to 6) and the direct operating costs summed by band sizes.

3 The direct costs exclude all off-site terminal pumping costs and business rates but for size bands 1 to 5 include Service charges within the direct cost lines.

General & support costs of STW's in bands size 1 to 5 & 6 (4N.6-4N.12)

4 General & support costs are allocated to Water Recycling Centres based on the direct costs. General & support costs include all support function costs (Finance, Human Resources, Regulation, Legal and IT) as well as the Director and senior management team costs. Water Recycling Centres are grouped into their respective site bands (1 to 6) with the general & support costs summed by band sizes 1 to 5 and recorded under Line 4N.6.

5 Line 4N.12 agrees to table 4O (Large sewage treatment works) Line 4O.15 total size band 6 general and support expenditure.

Service charges for STWs in size band 6 (4N.8)

6 Service charges all relate to payments to the Environment Agency for discharge consents relating to Water Recycling Centres. Service charges are allocated back to Water Recycling Centres and summed for all band 6 sites.

7 In April 2018 the Environmental Agency introdced a new charging scheme. The service charge for most sewage treatment works included within this line has therefore increased noticeably from the value reported last year.

8 Line 4N.8 agrees to table 4O (Large sewage treatment works) Line 4O.11 total band 6 service charges.

Estimated terminal pumping costs size band 6 works (4N.9)

9 Estimated direct (onsite) terminal pumping costs included in the band 6 direct costs (4N.9). These are captured at site level using our general ledger system with allocations employed for power costs and non specific site costs.

10 Line 4N.9 agrees to table 4O (Large sewage treatment works) Line 4O.12 estimated terminal pumping expenditure.

Direct costs of STWs in bands 6 (4N.10)

11 Direct sewage treatment costs are captured by individual cost centres for Water Recycling Centres where possible using our general ledger costing system (SAP). Allocations are used to split power costs between sludge and sewage treatment activities with further allocations employed for service charges, shared costs and non specific site costs including direct management. Water Recycling Centres are grouped into their respective site bands and the direct costs for site bands 6 are shown under line 4N.10.

12 The direct costs for site band 6 exclude onsite terminal pumping costs and service charges shown in lines 4N.8 and 4N.9.

13 The costs for size band 6 other direct sites (4N.10) agrees to the corresponding line on table 4O (lines 4O.13) for large sewage treatment works.

14 General & support costs of STWs in band size 6 (4N.12)

15 General & support costs are allocated to Water Recycling Centres based on the direct costs. General & support costs include all support function costs (Finance, Human Resources, Regulation. Legal and IT) as well as the Director and senior management team costs. Water Recycling Centres are grouped into their respective site bands with the costs associated to size band 6 sites shown under line 4N.12.

16 Line 4N.12 agrees to table 4O (Large sewage Treatment works) Line 4O.15 for the size band 6 general and support expenditure.

Total operating expenditure excluding 3rd party costs (4N.14)

17 Numbers in this line reconcile to Table 4E Line 4E.9 (total operating expenditure excluding 3rd party costs) excluding business rates shown in Table 4E Line 4E.8 for columns Network + sewage treatment.

Table 4O - Large Sewage Treatment Works

	Line description	Units	STWNAMED01	STWNAMED02	STWNAMED03	STWNAMED04	STWNAMED05	STWNAMED06	STWNAMED07	STWNAMED08	STWNAMED09	STWNAMED10
A	**Sewage treatment works - Explanatory variables**											
1	Works name	text	ANWICK STW	BASILDON STW	BEDFORD STW	BENFLEET STW	BOSTON STW	BOURNE STW	BRACKLEY STW (NEW)	BRAINTREE STW	BROADHOLME STW	CAISTER - PUMP LANE STW
2	Classification of treatment works	text	TA2	SAS	TA2	SB	SB	TA2	TA2	TA2	TA2	SAS
3	Population equivalent of total load received	000	34.03	127.47	187.45	28.01	50.47	29.93	36.94	29.42	243.66	112.02
4	Suspended solids consent	mg/l	26	45	30	80	70	22	25	16	30	0
5	BOD5 consent	mg/l	13	25	20	25	25	11	11	8	17	25
6	Ammonia consent	mg/l	6	10	7	20	0	3	3	3	3	0
7	Phosphorus consent	mg/l	2	0	1	0	0	2	2	2	1	0
8	UV consent	mW/s/cm2	0	0	0	0	0	0	0	0	0	0
9	Load received by STW	kgBOD5/d	2042	7648	11247	1681	3028	1796	2217	1765	14620	6721
10	Flow passed to full treatment	m3/d	4,642	26,725	42,141	6,026	10,092	6,630	7,230	6,507	52,313	27,018
B	**Sewage treatment works - Operating expenditure**											
11	Service charges	£000	17	33	33	19	17	19	19	19	33	32
12	Estimated terminal pumping expenditure	£000	2	131	175	0	1	0	0	0	26	0
13	Other direct expenditure	£000	567	671	1068	143	314	296	380	515	1235	696
14	Total direct expenditure	£000	586	835	1276	162	332	315	399	534	1294	728
15	General and support expenditure	£000	143	210	314	39	82	77	98	131	320	180
15	General and support expenditure	£000	729	1045	1590	201	414	392	497	665	1614	908

	Line description	Units	STWNAMED11	STWNAMED12	STWNAMED13	STWNAMED14	STWNAMED15	STWNAMED16	STWNAMED17	STWNAMED18	STWNAMED19	STWNAMED20
A	**Sewage treatment works - Explanatory variables**											
1	Works name	text	CAMBRIDGE STW	CANVEY ISLAND STW	CANWICK STW	CHELMSFORD STW	CLACTON-ON-SEA HOLLAND HAVEN STW	COLCHESTER STW	CORBY STW	COTTON VALLEY STW	DUNSTABLE STW	FELIXSTOWE STW
2	Classification of treatment works	text	SAS	SAS	TB2	SAS	SAS	SAS	TA2	TA2	TA2	SAS
3	Population equivalent of total load received	000	177.72	39.03	120.29	149.01	46.01	138.64	111.85	323.85	52.92	32.92
4	Suspended solids consent	mg/l	20	0	30	40	0	60	20	25	20	120
5	BOD5 consent	mg/l	15	25	10	20	25	25	10	12	12	25
6	Ammonia consent	mg/l	5	0	3	10	0	15	1	5	3	50
7	Phosphorus consent	mg/l	1	0	1	0	0	0	1	1	2	0
8	UV consent	mW/s/cm2	0	0	0	0	0	30	0	0	0	0
9	Load received by STW	kgBOD5/d	10663	2342	7217	8941	2760	8318	6711	19431	3175	1975
10	Flow passed to full treatment	m3/d	47,688	5,382	31,473	13,555	34,930	27,012	16,789	67,415	10,738	7,504
B	**Sewage treatment works - Operating expenditure**											
11	Service charges	£000	22	17	33	35	17	33	19	58	19	17
12	Estimated terminal pumping expenditure	£000	234	0	244	47	17	301	1	232	0	0
13	Other direct expenditure	£000	836	387	597	868	559	993	1494	2173	483	394
14	Total direct expenditure	£000	1092	404	874	950	593	1327	1514	2463	502	411
15	General and support expenditure	£000	273	99	214	234	146	334	371	613	124	100
15	General and support expenditure	£000	1365	503	1088	1184	739	1661	1885	3076	626	511

	Line description	Units	STWNAMED21	STWNAMED22	STWNAMED23	STWNAMED24	STWNAMED25	STWNAMED26	STWNAMED27	STWNAMED28	STWNAMED29	STWNAMED30
A	**Sewage treatment works - Explanatory variables**											
1	Works name	text	FLITWICK STW	FORNHAM ALL SAINTS STW	GREAT BILLING STW	GRIMSBY-PYEWIPE STW	HAVERHILL STW	HITCHIN STW	HUNTINGDON (GODMANCHESTER) STW	INGOLDMELLS STW	IPSWICH-CLIFF QUAY RAEBURN ST	KINGS LYNN STW
2	Classification of treatment works	text	TA2	TB2	TA2	SAS	TB2	TA2	TA2	SAS	SAS	TA2
3	Population equivalent of total load received	000	29.28	91.00	325.70	135.66	30.40	35.88	40.32	56.45	146.75	63.74
4	Suspended solids consent	mg/l	25	16	25	0	20	30	30	0	200	100
5	BOD5 consent	mg/l	15	8	13	25	10	15	20	25	25	25
6	Ammonia consent	mg/l	5	2	5	0	4	4	7	0	50	0
7	Phosphorus consent	mg/l	2	2	1	0	2	1	1	0	0	0
8	UV consent	mW/s/cm2	0	0	0	0	0	0	0	0	0	0
9	Load received by STW	kgBOD5/d	1757	5460	19542	8140	1824	2153	2419	3387	8805	3824
10	Flow passed to full treatment	m3/d	5,298	10,273	66,981	43,895	5,772	7,700	10,684	12,621	30,773	19,156
B	**Sewage treatment works - Operating expenditure**											
11	Service charges	£000	19	19	57	32	19	19	19	17	34	33
12	Estimated terminal pumping expenditure	£000	0	8	421	197	67	47	0	51	186	2
13	Other direct expenditure	£000	310	587	2080	1096	218	396	466	259	1369	1369
14	Total direct expenditure	£000	329	614	2558	1325	304	462	485	327	1589	1404
15	General and support expenditure	£000	81	149	628	333	74	114	119	81	396	352
16	Functional expenditure	£000	410	763	3186	1658	378	576	604	408	1985	1756

	Line description	Units	STWNAMED31	STWNAMED32	STWNAMED33	STWNAMED34	STWNAMED35	STWNAMED36	STWNAMED37	STWNAMED38	STWNAMED39	STWNAMED40
A	**Sewage treatment works - Explanatory variables**											
1	Works name	text	LEIGHTON LINSLADE STW	LETCHWORTH STW	LOWESTOFT STW	MARSTON STW (LINCS)	NEWMARKET STW	PETERBOROUGH (FLAG FEN) STW	ROCHFORD STW	SHENFIELD AND HUTTON STW	SOUTHEND STW	SPALDING STW
2	Classification of treatment works	text	TB2	TA2	SAS	TB2	TA2	TA1	TA1	TA2	SAS	SB
3	Population equivalent of total load received	000	42.96	45.94	83.29	68.36	27.21	223.05	34.20	42.80	198.60	70.65
4	Suspended solids consent	mg/l	35	25	0	15	20	24	60	20	150	120
5	BOD5 consent	mg/l	25	13	25	10	12	9	25	10	25	25
6	Ammonia consent	mg/l	8	3	0	3	4	3	0	3	0	0
7	Phosphorus consent	mg/l	2	1	0	2	2	0	0	2	0	0
8	UV consent	mW/s/cm2	0	0	0	0	0	0	0	0	0	0
9	Load received by STW	kgBOD5/d	2577	2757	4997	4102	1633	13383	2052	2568	11916	4239
10	Flow passed to full treatment	m3/d	6,444	7,360	16,893	15,159	4,724	59,081	9,259	11,555	58,519	11,471
B	**Sewage treatment works - Operating expenditure**											
11	Service charges	£000	19	19	32	19	19	33	17	19	32	19
12	Estimated terminal pumping expenditure	£000	15	21	2	5	0	196	0	0	431	17
13	Other direct expenditure	£000	439	509	1213	297	248	2101	535	588	1421	335
14	Total direct expenditure	£000	473	549	1247	321	267	2330	552	607	1884	371
15	General and support expenditure	£000	116	135	307	79	65	575	136	188	471	91
15	General and support expenditure	£000	589	684	1554	400	332	2905	688	795	2355	462

Line description	Units	STWNAMED41	STWNAMED42	STWNAMED43	STWNAMED44	STWNAMED45	STWNAMED46	STWNAMED47	STWNAMED48	STWNAMED49
A	**Sewage treatment works - Explanatory variables**									
1	Works name	text	ST NEOTS STW	TETNEY-NEWTON MARSH STW	THETFORD STW	TILBURY STW	WEST WALTON STW	WHILTON STW	WHITLINGHAM TROWSE STW	WICKFORD STW	WITHAM STW
2	Classification of treatment works	text	TB2	TA2	TA2	SAS	SAS	TB2	TA2	TA1	SAS
3	Population equivalent of total load received	000	41.55	57.38	27.31	158.86	119.16	31.28	304.08	42.20	36.85
4	Suspended solids consent	mg/l	90	45	50	0	80	24	40	45	40
5	BOD5 consent	mg/l	25	25	25	25	25	12	20	22	20
6	Ammonia consent	mg/l	0	0	16	65	20	3	7	10	10
7	Phosphorus consent	mg/l	1	0	2	0	0	2	1	0	0
8	UV consent	mW/s/cm2	0	30	0	0	0	0	0	30	0
9	Load received by STW	kgBOD5/d	2493	3443	1639	9532	7150	1877	18245	2532	2211
10	Flow passed to full treatment	m3/d	10,166	15,746	6,852	42,034	13,990	5,407	71,540	10,235	5,865
B	**Sewage treatment works - Operating expenditure**									
11	Service charges	£000	19	33	19	32	19	27	57	19	19
12	Estimated terminal pumping expenditure	£000	0	3	10	139	0	0	6	0	32
13	Other direct expenditure	£000	213	555	410	1547	1063	211	2068	458	433
14	Total direct expenditure	£000	232	591	439	1718	1082	238	2131	477	484
15	General and support expenditure	£000	57	145	109	433	265	58	532	117	118
15	General and support expenditure	£000	289	736	548	2151	1347	296	2663	594	602

Works name, classification of treatment works and population equivalent of total load received (4O.1-4O.3)

1 We have calculated the population equivalent and the loads on a basis consistent with how we used to report table 17b in the June Return. The numbers exclude imported effluents (tankering) and include non-resident population.

BOD5 Consent (4O.5)

2 For a number of water recycling centres the UWWTD BOD limit of 25mg/l is tighter than the normal BOD limit specified in the Environmental Permit. In these situations we have therefore reported the UWWTD BOD limit as we believe this is more appropriate to use for comparative efficiency purposes. This approach is consistent with that taken when the data used to be provided as part of the June Return.

Service Charges (4O.11)

3 In April 2018 the Environment Agency introduced a new charging scheme. The service charge for most of the water recycling centres included within this line has therefore increased noticeably from the value reported in 2017/18.

4 Service charges in total for large works agrees to table 4N sewage treatment (line 4N.8).

Estimated terminal pumping expenditure (4O.12)

5 This line records the estimated onsite direct terminal pumping costs by WRC. These are captured at site level for our band 6 WRCs, with allocations employed for power costs and non site-specific direct costs.

6 Total estimated terminal pumping costs line 4O.12 agree to table 4N sewage treatment (line 4N.9).

Other Direct expenditure (4O.13)

7 Other direct expenditure cost lines are captured by individual cost centres for WRCs where possible using our general ledger costing system (SAP) for the band 6 treatment sites. Allocations are employed to split power costs between sludge and sewage treatment activities and allocate service charges and direct non site-specific costs to water recycling centres. The direct costs exclude business and exclude service charges and onsite terminal pumping expenditure shown separately.

8 The total other direct costs agrees to table 4N line 4N.10.

General and support expenditure (4O.15)

9 General and support expenditure is allocated to individual WRCs based on the direct expenditure. General and support expenditure includes all support function costs (Finance, Human Resources, Regulation, Legal and IT etc.) as well as the Directors and senior management teams.

10 The total general and support costs agrees to table 4N line 4N.12.

Table 4P - Non-Financial Data for Water Resources, Water Treatment and Water Distribution

	Line description	Units	Current year
A	**Water resources**		
1	Proportion of distribution input derived from impounding reservoirs	Propn 0 to 1	0.021
2	Proportion of distribution input derived from pumped storage reservoirs	Propn 0 to 1	0.423
3	Proportion of distribution input derived from river abstractions	Propn 0 to 1	0.063
4	Proportion of distribution input derived from groundwater works,excluding managed aquifer recharge (MAR) water supply schemes	Propn 0 to 1	0.493
5	Proportion of distribution input derived from artificial recharge (AR) water supply schemes	Propn 0 to 1	0.000
6	Proportion of distribution input derived from aquifer storage and recovery (ASR) water supply schemes	Propn 0 to 1	0.000
7	Proportion of distribution input derived from saline abstractions	Propn 0 to 1	0.000
8	Proportion of distribution input derived from water reuse schemes	Propn 0 to 1	0.000
9	Number of impounding reservoirs	nr	2
10	Number of pumped storage reservoirs	nr	8
11	Number of river abstractions	nr	17
12	Number of groundwater works excluding managed aquifer recharge (MAR) water supply schemes	nr	208
13	Number of artificial recharge (AR) water supply schemes	nr	0
14	Number of aquifer storage and recovery (ASR) water supply schemes	nr	0
15	Number of saline abstraction schemes	nr	-
16	Total number of sources	nr	235
17	Number of reuse schemes	nr	0
18	Total number of water reservoirs	nr	13
19	Total capacity of water reservoirs	Ml	227,643
20	Total number of intake and source pumping stations	nr	228
21	Total number of raw water transport stations	nr	9
22	Total capacity of intake and source pumping stations	kW	42967
23	Total capacity of raw water transfer pumping stations	kW	13534
24	Total length of raw water abstraction mains and other conveyors	km	148.07
25	Average pumping head – raw water abstraction	m.hd	40.44
26	Average pumping head – raw water transport	m.hd	40.67
27	Total length of raw and pre-treated (non-potable) water transport mains	km	596.14
28	Water resources capacity (measured using water resources yield)	Ml/d	1644.97

	Line description	Units	Current year
B	**Water treatment**		
29	Total water treated at all SW simple disinfection works	Ml/d	0.00
30	Total water treated at all SW1 works	Ml/d	0.00
31	Total water treated at all SW2 works	Ml/d	0.00
32	Total water treated at all SW3 works	Ml/d	0.00
33	Total water treated at all SW4 works	Ml/d	6.04
34	Total water treated at all SW5 works	Ml/d	524.39
35	Total water treated at all SW6 works	Ml/d	6.59
36	Total water treated at all GW simple disinfection works	Ml/d	13.06
37	Total water treated at all GW1 works	Ml/d	1.64
38	Total water treated at all GW2 works	Ml/d	178.73
39	Total water treated at all GW3 works	Ml/d	146.47
40	Total water treated at all GW4 works	Ml/d	224.94
41	Total water treated at all GW5 works	Ml/d	59.90
42	Total water treated at all GW6 works	Ml/d	0.00
43	Total water treated at more than one type of works	Ml/d	0.00
44	Total number of SW simple disinfection works	nr	0
45	Total number of SW1 works	nr	0
46	Total number of SW2 works	nr	0
47	Total number of SW3 works	nr	0
48	Total number of SW4 works	nr	1
49	Total number of SW5 works	nr	13
50	Total number of SW6 works	nr	1
51	Total number of GW simple disinfection works	nr	4
52	Total number of GW1 works	nr	1
53	Total number of GW2 works	nr	43
54	Total number of GW3 works	nr	30
55	Total number of GW4 works	nr	33
56	Total number of GW5 works	nr	6
57	Total number of GW6 works	nr	0
58	Number of treatment works requiring remedial action because of raw water deterioration	nr	0
59	Zonal population receiving water treated with orthophosphate	000	4,659.799
60	Average pumping head – water treatment	m.hd	9.45

	Line description	Units	Current year
C	**Water distribution**		
61	Total length of potable mains as at 31 March	km	38,584.4
62	Total length of potable mains relined	km	0.0
63	Total length of potable mains renewed	km	100.9
64	Total length of new potable mains	km	156.8
65	Total length of potable water mains (<=320mm)	km	35,632.2
66	Total length of potable water mains >320mm - <=450mm	km	1,716.4
67	Total length of potable water mains >450mm - <=610mm	km	627.7
68	Total length of potable water mains > 610mm	km	608.1
69	Capacity of booster pumping stations	kW	77654
70	Capacity of service reservoirs	Ml	1820
71	Capacity of water towers	Ml	120
72	Distribution input	Ml/d	1,159
73	Water delivered (non-potable)	Ml/d	45.11
74	Water delivered (potable)	Ml/d	1,001.51
75	Water delivered (billed measured residential)	Ml/d	498.81
76	Water delivered (billed measured business)	Ml/d	291.34
77	Total leakage	Ml/d	191.24
78	Distribution losses	Ml/d	148.43
79	Water taken unbilled	Ml/d	27.41
80	Number of lead communication pipes	nr	516161
81	Number of galvanised iron communication pipes	nr	184569
82	Number of other communication pipes	nr	1,517,935
83	Number of booster pumping stations	nr	450
84	Total number of service reservoirs	nr	256
85	Number of water towers	nr	130
86	Total length of potable mains laid or structurally refurbished pre-1880	km	5.4
87	Total length of potable mains laid or structurally refurbished between 1881 and 1900	km	5922.0
88	Total length of potable mains laid or structurally refurbished between 1901 and 1920	km	3563.4
89	Total length of potable mains laid or structurally refurbished between 1921 and 1940	km	1,107.3
90	Total length of potable mains laid or structurally refurbished between 1941 and 1960	km	6,729.1
91	Total length of potable mains laid or structurally refurbished between 1961 and 1980	km	5,117.4
92	Total length of potable mains laid or structurally refurbished between 1981 and 2000	km	12,490.5
93	Total length of potable mains laid or structurally refurbished post 2001	km	3,648.9
94	Average pumping head – treated water distribution	m.hd	73.29

	Line description	Units	Current year
D	**Band Disclosure (nr)**		
95	WTWs in size band 1	Nr	39
96	WTWs in size band 2	Nr	26
97	WTWs in size band 3	Nr	33
98	WTWs in size band 4	Nr	19
99	WTWs in size band 5	Nr	11
100	WTWs in size band 6	Nr	1
101	WTWs in size band 7	Nr	2
102	WTWs in size band 8	Nr	1
E	**Band Disclosure (%)**		
103	Proportion of Total DI band 1	%	3.7%
104	Proportion of Total DI band 2	%	6.8%
105	Proportion of Total DI band 3	%	15.3%
106	Proportion of Total DI band 4	%	18.2%
107	Proportion of Total DI band 5	%	21.4%
108	Proportion of Total DI band 6	%	2.8%
109	Proportion of Total DI band 7	%	15.9%
110	Proportion of Total DI band 8	%	15.8%

Proportion of distribution input from different sources (4P.1-4P.6)

1 The data includes imports and water for non-potable use but excludes exports.

Proportion of distribution input derived from impounding reservoirs (4P.1)

2 The reported estimates are based on distribution input (DI) from the following reservoir sources.

- Ravensthorpe WTW (Ruthamford North RZ): 100 per cent yield from natural inflow ("natural"). WTW supplied from both Ravensthorpe and Hollowell Reservoirs
- Alton WTW (East Suffolk RZ): 31 per cent natural yield from Alton Water
- Pitsford WTW (Ruthamford North RZ): 44 per cent natural yield from Pitsford Reservoir.

Proportion of distribution input derived from pumped storage reservoirs (4P.2)

3 The reported estimates are based on distribution input (DI) from the following reservoir sources.

- Alton WTW (East Suffolk RZ): 69 per cent pumped yield from Alton Water
- Ardleigh WTW (South Essex RZ): 82 per cent pumped yield from Ardleigh Reservoir
- Covenham WTW (East Lincolnshire RZ): 100 per cent pumped yield from Covenham Reservoir
- Grafham WTW (Ruthamford South RZ): 99 per cent pumped yield from Grafham Reservoir

- Pitsford WTW (Ruthamford North RZ): 56 per cent pumped yield from Pitsford Reservoir
- Wing WTW and Morcott WTW (Ruthamford North RZ): 88 per cent pumped yield from Rutland Water.

4 For Ardleigh WTW, Grafham WTW and Wing/Morcott WTW it is assumed that the reservoir yield is 100 per cent from pumped inflow sources. This is in accordance with the line definition.

Proportion of distribution input derived from river abstractions (4P.3)

5 The reported estimates are based on DI from the following river abstraction sources.

- Bedford WTW (River Ouse)
- Elsham WTW (River Ancholme)
- Hall WTW (River Trent)
- Heigham WTW (River Wensum)
- Marham WTW (River Nar)
- Saltersford WTW (River Witham)
- Stoke Ferry WTW (River Wissey).

Proportion of distribution input derived from groundwater works, excluding managed aquifer recharge (MAR) water supply schemes (4P.4)

6 The reported estimates are based on the borehole sources reported in line 4P.10.

Proportion of distribution input derived from artificial recharge (AR) and aquifer storage and recovery water supply schemes (4P.5 and 4P.6)

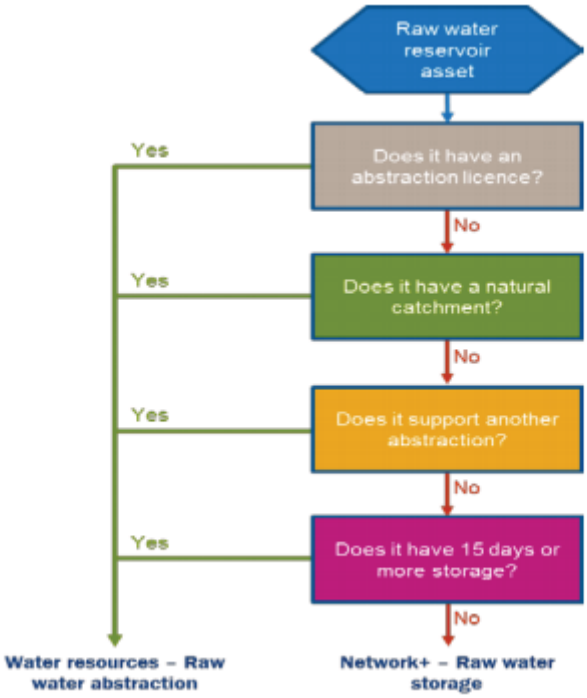
7 No such schemes are operated by the company.

Proportion of distribution input derived from saline abstractions and water reuse schemes (4P.7 and 4P.8)

8 No such schemes are operated by the company.

Number of impounding reservoirs and pumped storage reservoirs (4P.9 and 4P.10)

9 The reported numbers reflect the number of reservoirs classified as raw water abstraction based on the flow chart on page 113 of RAG 4.08.



Impounding reservoirs (2 no.)

- Ravensthorpe (Ruthamford North RZ): 100 per cent inflow
- Hollowell (Ruthamford North RZ): 100 per cent inflow.

Pumped storage reservoirs (8 no.)

- Alton (East Suffolk RZ): 69 per cent pumped
- Ardleigh (South Essex RZ): 82 per cent pumped
- Covenham (East Lincolnshire RZ): 100 per cent pumped
- Grafham (Ruthamford South RZ): 99 per cent pumped
- Pitsford (Ruthamford North RZ): 56 per cent pumped
- Rutland Water (Ruthamford North RZ): 88 per cent pumped
- Cadney Carrs (East Lincolnshire RZ): 100 per cent pumped
- Costessey Pits (Norwich & the Broads RZ): 100 per cent pumped.

10 The RAG 4.08 guidance means we now also class Cadney Carrs and Costessey Pits as raw water reservoirs. Cadney Carrs has storage >15 days, and Costessey Pits has an abstraction licence.

11 The definition for Line 8 specifies that the reservoirs should be classified as either pumped or impounding, on the basis of the majority of the type of flow that they receive.

Number of river abstractions (4P.11)

12 We are reporting seventeen river abstractions for 2018/19. This consists of both direct river intakes and also ten indirect supporting river abstractions. This reflects the full complement of our surface water intake assets.

Direct river intakes (7 no.)

- Cadney (River Ancholme)
- Clapham (Bedford Ouse)
- Hall (River Trent)
- Heigham (River Wensum)
- Costessey (River Wensum)
- Marham (River Nar)
- Stoke Ferry (River Wissey).

Indirect supporting river abstractions (10 no.)

- Tinwell (River Welland for Rutland Water)
- Wansford (River Nene for Rutland Water)
- Offord (River Great Ouse for Grafham Water)
- Duston Mill (River Nene for Pitsford reservoir)
- Sproughton (River Gipping for Alton Water)
- Bucklesham (Mill River for Alton Water)
- East Mills (River Colne for Ardleigh)
- Covenham intake (Louth Canal for Covenham reservoir)
- Cloves Bridge (River Great Eau for support to Covenham)
- Cut-off-Channel (for support to Stoke Ferry)

13 Bath Springs and Cringle Brook intake at Saltersford and Foxcote reservoir, do not supply so are not included in the reported list.

Number of groundwater works, excluding managed aquifer recharge (MAR) water supply schemes (4P.12)

14 We report 208 groundwater sources for 2018/19 which is the same as reported for the 2017/18 year. Of these, 198 are in the Anglian region and 10 are in the Hartlepool region.

Number of artificial recharge (AR) and aquifer storage and recovery schemes (ASR) water supply schemes (4P.13 and 4P.14)

15 No such schemes are operated by the company.

Number of saline abstraction schemes (4P.15)

16 No such schemes are operated by the company.

Total number sources (4P.16)

17 The reported number is summed from Lines 7-12.

Number of reuse schemes (4P.17)

18 No such schemes are operated by the company.

Total number of water reservoirs (4P.18)

19 The reported number (13 no.) includes the impounding and pumped storage reservoirs reported in Lines 9 (2 no.) and 10 (8 no.) as well as three bank-side storage reservoirs at the following locations:

1. Heigham Large Deposit Reservoir – for Heigham WTW
2. Bedford – for Clapham WTW
3. South Clifton – for Hall WTW.

20 Although raw water is pumped into these reservoirs, RAG 4.08 guidance (Figure 1) classes them as network + raw water storage rather than raw water abstraction, and therefore these have not been included in Lines 9 and 10. The purpose of these reservoirs is to provide resilience rather than storage and as such they do not have an abstraction licence or a natural catchment.

Total capacity of water reservoirs (4P.19)

21 The capacity of all water has been revised in line with guidance to reflect the design and construction capacity of the reservoir where possible. This remains at 227643 Ml.

Total number of intake and source pumping stations (4P.20)

22 Following guidance in the Ofwat RAG Guidelines & Appendices, we have identified raw water transport pumps within surface water systems and groundwater sources. Surface water transport has been split between abstraction to reservoir and abstraction from reservoir to treatment. Groundwater sources have been split based on the proportion of pumping head that that goes to treatment (considered to be raw water abstraction) and the proportion that goes to supply (considered to be water distribution). Line 18 reports the proportion of pumping capacity that is associated with the raw water abstraction from groundwater sources.

23 In line with the disaggregation of raw water transport pumps, for 2018/19 we are reporting:

- 20 no. intake and source pumping stations including 1 no. gravity intake system at Ravensthorpe Reservoir
- 208 groundwater sources

24 This is the same as reported for the 2017/18 report year.

Total number of raw water transfer stations (4P.21)

25 In line with the guidance as described above, for 2018/19 we are reporting:

- 9 no. transfer pumping stations including 1 no. gravity intake system at Ravensthorpe Reservoir.

26 This is the same as reported for the 2017/18 report year.

Total capacity of intake and source pumping stations (4P.22)

27 The river abstraction and reservoir intakes and capacities are referenced in a survey of the raw water abstraction assets (Atkins, 2012) and updated by the Energy Team. The number of boreholes and pumps are reported in a borehole database maintained by the Water Resources Management Team. This is cross referenced with data from the Groundwater Engineering Unit (GWEU) and Energy Team for the pump capacities. Both data sets have been reviewed for the 2018/19 APR with a small increase to the groundwater pumping capacity to reflect 3 new borehole pumps coming online.

28 For a small number of boreholes the rated power of individual borehole pumps could not be sourced from the SAP (corporate asset database) or the GWEU team records. For these, energy team site audit data was used to populate the pump capacity.

Total capacity of raw water transfer pumping stations (4P.23)

29 As for line 22, the river abstraction and reservoir capacities are referenced in a survey of the raw water abstraction assets (Atkins, 2012) and periodically updated by the Energy Team. The most recent update was in 2017 and this data is still considered to be correct.

Total length of raw water abstraction mains and other conveyors (4P.24)

30 This data has been reviewed and refined for PR19. This line has been calculated using the latest raw water mains data out of our corporate mapping system (G/water). The lengths have also been calculated using the guidance provided in RAG 4.08. There is very little change from 2017/18.

Average pumping head (4P.25, 4P.26 and 4P.60)

31 For 2018/19 pumping head is based on telemetry pressure or level sensor data where possible and reported pump head or site data where not. However, there has been some difficulty separating resources and raw water transport for the majority of sites as there is not the resolution on the data required except on the larger treatment works.

32 The sources of data for flow in these calculations are primarily reported abstraction flows or telemetry. Where a site has multiple boreholes and only a single combined flow meter we have assumed an equal flow between the boreholes.

33 We are confident about the combined total average pumping head for water resources and raw water transport. However, for some sites we are unable to split the pumping head between the two categories. In these instances all the pumping head has been assigned to resources as we have been unable to obtain the necessary data to be able to proportionally split the pumping head.

Total length of raw and pre-treated (non-potable) water transport mains (4P.27)

34 This data has been reviewed and refined for PR19. The lengths have also been calculated using the guidance provided in RAG 4.08.

35 A lot of work has been performed on refining mains liquid type classifications around sites and treatment processes, where pipes that were once included in this bracket are now classified, in many cases, as process mains. This has led to a 48km length decrease from the figure quoted in the 2017/18 length for PR19.

Total water treated by SW-GW code (4P.29-4P.43)

36 Historic volumetric Distribution Input (DI) data (SWORPS) has been used for each of the Water Treatment Works (WTW) in our region, including imports/exports and sites which include combined sources (both boreholes and river abstractions).

37 Data has been analysed to split the proportion of DI between WTW codes.

38 The individual WTW is classified by the most complex treatment process in operation. An individual treatment can be assessed as SD, W1, W2, W4 and W6 - (Not W3 or W5). The WTW complexity is determined by the most complex treatment practised and may have a code of SD, W1, W2, W3, W4, W5, or W6. Note that W3 is applied where more than one W2 treatment is practised and W5 is applied where more than one W4 treatment is practised.

39 It is noted that for 2018/19 additional analysis and consideration has been given to the definitions of the WTW coding system and how sites should be consequently attributed. This has been used to attribute the volume of DI to respective WTW codes, based upon our interpretation of works complexity in accordance with Ofwat Guidance (including imports and exports and combined sources).

40 Data includes imports and excludes exports.

41 DI volumes include an allowance for MLE (Maximum Likelihood Estimation) in alignment with June Return reporting. The volume outputs are, therefore, aligned according to their category (borehole, impounding reservoir or river abstraction) to reconcile with reported figures for impounding reservoirs, river abstractions, boreholes and imports.

42 Note has been made of combined sources (Elsham, Heigham, Marham and Stoke Ferry) with DI being proportionally split in line with the base-year data between groundwater and surface water sources.

Total number of sites by SW–GW code (4P.44-4P.57)

43 Water Treatment Works (WTW) numbers are aligned with the information submitted annually in the detailed tables to the Drinking Water Inspectorate (DWI) in accordance with the Information Direction. WTW numbers may vary year on year due to changes in the configuration of the supply system, and specifically, the location of the final water monitoring points.

44 In 2017 and 2018 changes were made to ensure alignment with the revised Water Supply (Water Quality) Regulations 2016 and 2017 respectively.

Number of treatment works requiring remedial action because of raw water deterioration (4P.58)

45 No sites have been recorded as requiring remediation.

Zonal population receiving water treated with orthophosphate (4P.59)

46 The zonal population receiving water treated with orthophosphate is calculated from the information reported to the DWI in the Details Tables provided annually in accordance with the Information Direction. All Public Water Supply Zones (PWSZ) receiving orthophosphate dosed water are identified in the Details Tables which also document the population of each PWSZ.

47 There has been a steady increase in the population receiving orthophosphate dosed water, which is partly due to the increase in the number of WTW with orthophosphate dosing plant in operation, as well as the general increase in total population of the Anglian and Hartlepool regions.

Total length of potable mains as at 31 March (4P.61)

48 The data is consistent with the previous year's methodology. There is a fairly typical increase in length from the previous year's increase of ~165km to 38,584.4km for 2018/19.

Total length of potable mains relined and renewed (4P.62 and 4P.63)

49 In 2018/19 we renewed or relined 100.91km. This is a combination of our planned mains renewal programme (78km), burst mains repairs (15km) and smaller lengths from some developer related activity and proactive leakage activity. As in previous years we have not distinguished between relining and other renewal work and the combined figure is reported on line 63. Line 62 is therefore zero as in previous years.

Total length of new potable mains (4P.64)

50 As in previous years the large majority of the new mains laid in 2018/19 came from our developer services team housing estate mains and reinforcement work to accommodate growth.

Potable mains by diameter band (4P.65-4P.68)

51 These lines have been calculated using the latest in-service company-owned potable water mains data out of G/water (our corporate mapping system). The largest increase at 148km is in the smallest diameter band – line 65. There was a minor decrease in line 67 of 11km, which is due to constant improvement around the accuracy of the base data.

Number and capacity of booster pumping stations (4P.69 and 4P.83)

52 The number of water booster stations has been determined by reviewing GIS records and cross referencing these against SAP records (for creation & decommissioning dates) and additional operational data repositories (MISER - strategic supply schematic & IRIS - regional telemetry system) to determine the categorisation of the station. These stations were then reviewed to understand if they resided on the same "site" and whether they should be considered as a single site or multiple sites as per recent clarifications. Where both Surface Water and Ground Water are supplied by the same site then the site is listed once against the more significant source. Where a relift water booster resides on the same site as another unconnected relift booster / surface water booster / ground water booster, this has been counted as an independent site. Where a borehole pump boosts directly into distribution this has been included in the number of Ground Water sites. Single property boosters have not been included. The slight decrease in the number of sites and rated capacity published last year is due to recent clarifications around the definition of a site and better data, particularly around site decommissioning dates.

Number and capacity of service reservoirs (4P.70 and 4P.84)

53 There has been an increase in number of service reservoirs from 250 structures in the 2017/18 report year to 256 in the 2018/19 report year. This is a result of on-going improvements in data quality. On reviewing our GIS master data, some omissions were highlighted (mainly service reservoirs located at water treatment works).

54 The increase in capacity relates in the most part to the above additional structures but also to improvements to data following tank cleaning inspections.

Numbers and capacity of water towers (4P.71 and 4P.85)

55 The 2017/18 report year recorded 131 structures. The 2018/19 report year records 130. The difference is identified as:

- Honingham water tower (WT) was incorrectly reported as one structure. There are three physically separate structures
- Pinchbeck WT, Southwick WT and Bocking Lyons Hall WT are all now permanently out of service and in the process of being decommissioned.

56 The decommissioning of three water towers explains the decrease in capacity from the last report year.

Distribution Input (4P.72)

57 Distribution Input has risen this year due to the hot summer weather which led to additional domestic and non-household demand for water and increased leakage caused by the legacy from the "Beast from the East" and the dry ground conditions.

Water delivered non-potable (4P.73)

58 The amount of water delivered to our non-potable customers is similar to 2017/18.

Water delivered potable (4P.74-4P.76)

59 Water delivered to measured residential properties continues to rise as customers switch from unmeasured to measured billing and is countered by a drop in water delivered to unmeasured residential properties.

60 Water delivered to measured business customers has increased this year due to the summer weather. We have found that data held in the CMOS system (Central Market Operating System) is not reliable enough to calculate consumption for the water balance due to lack of readings and delays in settlements being updated with the latest meter reading data. This year we have taken approximately 20,000 meter readings, in addition to those taken by retailers, to ensure that peak summer demand is captured as consumption and we allocate demand and leakage in the water balance correctly.

Leakage (4P.77 and 4P.78)

61 Leakage for 2018/19 is assessed at 191.24 Ml/d. This represents a 9 Ml/d increase on 2017/18. Three year rolling average leakage is assessed at 186 Ml/d, which out performs our Performance Commitment of 192 Ml/d.

62 This year we have seen extremes of weather impacting network performance. At the start of the year performance was impacted by the recovery from the "Beast from the East". This was rapidly followed by the long hot and dry summer, which caused high soil moisture deficits and ground movement. Both these events stressed the network and caused elevated burst events on our infrastructure and customer supply pipes, leading to increased leakage levels. We also saw significantly elevated demand and night use for the summer period from the end of June to the start of August.

63 In August we formed a high level steering group with the remit of developing an 18 month plan to ensure that actions were in place to continue our leakage reduction through the AMP with the continued aim of reaching a level of 172 Ml/d by the end of year 5 AMP6. The plan included:

- Increasing the number of detection technicians from 138 people to 203
- Increasing the number of leakage analysts from 41 to 55.5
- Increasing the number of network technicians from 142 to 151
- Increasing the number of repair teams from 89 to 102
- Bringing forward investment to deploy 3,500 fixed noise loggers from AMP7 to allow 12% of the network to be covered by the end of AMP6.

64 We have maintained the existing strands of our Leakage Strategy this year:

- Network / pump optimisation schemes - There have been 26 optimisation schemes implemented this year delivering 2.73 Ml/d leakage reduction
- Intensive Leakage Programme (the "172 process") - This process has now reviewed 796 District Meter Areas resulting in leakage reduction of 4.85 Ml/d.

65 We remain committed to our downward glide path towards meeting our ambitious goals for leakage reduction and our specific targets for the end of the AMP.

Water taken unbilled (4P.79)

66 Water taken unbilled remains similar to 2017/18.

Number of communication pipes (4P.80-4P.82)

67 Our communication pipe stock was last modeled in 2012 for Periodic Review in 2014. That report has been used as a starting point and the number of replaced lead and galvanized iron communication pipe has been subtracted from the 2012 modeled totals.

Total length of mains laid or structurally refurbished (4P.86-4P.93)

68 As expected almost all diameter bands have either decreased in length or remained stable. The only diameter band that has seen a significant increase is line 93, for mains laid or structural refurbished post 2001. This age band has seen an additional 262km in 2018/19.

Average pumping head - distribution (4P.94)

69 We have kept a very similar method to previous years' submissions, splitting the company into 52 discrete systems covering 92 per cent of our Distribution Input (DI). These were investigated, updated, data cleansed and used to calculate the average pumping head.

WTWs by category (4P.95-4P.102)

70 The number of sites in each specified WTW category (based upon Ml/d DI) is defined, based upon our source works output reporting system data.

71 Volumes per WTW have been calculated using 2018/19 year values. WTWs have then been grouped by size band, as described, giving total numbers of WTWs per band and the percentage of DI associated with each band calculated.

Size band	Distributed Input Ml/d
Band 1	< 2
Band 2	≤ 2 and < 4
Band 3	≤ 4 and < 8
Band 4	≤ 8 and < 16
Band 5	≤ 16 and < 32
Band 6	≤ 32 and < 64
Band 7	≤ 64 and < 128
Band 8	≥ 128

Proportion of distribution input by band (4P.103-4P.110)

72 The proportions of DI in each WTW category (based upon pre-MLE SWORPS - Ml/d DI) are derived from the same data system as Lines 4P.95-4P.102.

Table 4Q - Non-Financial Data - Properties, Population and Other - Wholesale Water

	Line description	Units	Current year
A	**Properties and population**		
1	Residential properties billed for measured water (external meter)	000	1,419.224
2	Residential properties billed for measured water (not external meter)	000	221.251
3	Business properties billed measured water	000	109.670
4	Residential properties billed for unmeasured water	000	349.003
5	Business properties billed unmeasured water	000	1.598
6	Total business connected properties at year end	000s	129.384
7	Total residential connected properties at year end	000s	2,089.281
8	Total connected properties at year end	000	2,218.665
9	Number of residential meters renewed	000	92.328
10	Number of business meters renewed	000s	6.624
11	Number of meters installed at request of optants	000	7.590
12	Number of selective meters installed	000	5.108
13	Total number of new business connections	000	1.559
14	Total number of new residential connections	000	23.425
15	Total population served	000	4,724.217
16	Number of business meters (billed properties)	000	110.784
17	Number of residential meters (billed properties)	000	1,657.992
18	Company area	km2	22,651
B	**Other**		
19	Number of lead communication pipes replaced for water quality	nr	469
20	Total supply side enhancements to the supply demand balance (dry year critical / peak conditions)	Ml/d	0.00
21	Total supply side enhancements to the supply demand balance (dry year annual average conditions)	Ml/d	0.00
22	Total demand side enhancements to the supply demand balance (dry year critical / peak conditions)	Ml/d	-5.45
23	Total demand side enhancements to the supply demand balance (dry year annual average conditions)	Ml/d	-5.77
24	Energy consumption - network plus	MWh	296,473
25	Energy consumption - water resources	MWh	90,183
26	Energy consumption - wholesale	MWh	386,657
27	Mean Zonal Compliance	%	99.95%
28	Compliance Risk Index	nr	2.1
29	Event Risk Index	nr	9.1
30	Volume of Leakage above or below the sustainable economic Level	Ml/d	-19.760

Meter location (4Q.1 and 4Q.2)

1 We have changed to a more robust data source for these lines, making use of the information recorded by meter readers. Using this source, we show a higher proportion of external meters than we have shown in previous years.

Business properties billed (4Q.3 and 4Q.5)

2 In these lines we report the number of business properties for which we have reported revenue. They were not billed by Anglian Water. We exited the non-household retail market at the start of 2017/18 so all our connected non-household properties are now billed by other retailers. Movements from prior years reflect continued re-classification of properties in the non-household retail market.

Total connected properties at year-end (4Q.6-4Q.8)

3 The report year 2018/19 saw an annual total connection (line 8) increase of 1.05 per cent. This follows the trend of variances experienced in previous reporting periods. These lines do not include properties connected to Anglian Water sewerage systems which receive water services from other companies.

Number of meters (4Q.9-4Q.12)

4 For the number of renewed meters during the reported year, we have combined both proactive meter exchange and reactive meter exchange programme numbers to obtain a total figure. The split between residential meters and business meters was calculated by using all properties identified as business eligible since market opened in April 2017.

5 We have seen a significant increase of meters being renewed for business premises as the market has become more established since 2017. Retailers are now more engaged with their customers as well as their billing process and will raise queries on meter issues which have lead to more meters being renewed.

6 The number of customers opting for a meter continues to fall as we get closer to full meter penetration and as a result of our meter enhancement programme. Customers for whom we have already fitted a meter under our enhancement programme and who wish to pay measured charges will be recorded as switchers.

7 Selective meters include 427 compulsory meters plus meters fitted under our enhanced metering programme as both are carried out at our behest. Under our enhanced metering programme we fit a meter to a customer's house but they continue to pay by rateable value until they ask to switch or the property changes hands.

8 There has been a marked reduction of meters fitted at the behest of Anglian Water this year. This was forecasted to be lower due to the area we rolled the enhancement programme to with a high percentage of properties already metered. The Integrated Metering and Developer Services team (IMDS) also diverted resources to help out with the extraordinary weather and the subsequent disruption we had in 2018 so loss of productivity to complete the programme also had an impact.

Total population served (4Q.15)

9 Population is calculated based upon our SAP customer property information, Office of National Statistics (ONS) and population and local authority household data. Population is derived using the estimation of households served by Anglian Water, as a percentage of the ONS/DCLG (Department for Communities and Local Government) totals, applied to the ONS LAUA population assessments. Additional account is taken of communal population, which is derived using census data.

10 The estimate of household population is based on the 2012 (2016 update) sub-national population and local authority property totals from the ONS and DCLG. Additionally, the population figures have been amended to reflect the current ONS 2018 mid year estimates revision.

11 Consistent with prior submissions, we apportion the data for the local authority districts we serve to derive an estimate of the water population in the Anglian Water region.

12 It is noted that there has been a significant change in the ONS household projection data since the last submission. This reduction in official data for households, in combination with the increase in population, has produced an increase in Occupancy rates. When these are applied to our billing property totals this has caused an overall increase in population in excess of 1%, solely due to this numerical change. When combined with the increase in population due to housing growth, it is noted that total population has increased by approximately 110,000 (with approximately 70,000 of this being due to the changes in ONS occupancy data).

Numbers of meters (billed properties) (4Q.16 and 4Q.17)

13 These lines count meters at billed properties rather than billed properties that are metered. The values exceed the values of lines 1-3 because of properties with more than one meter.

14 The increase in residential meters is consistent with the number of switchers and new residential connections. We have excluded enhanced meters at properties where the customer has not switched and continues to be charged on an unmeasured basis. Movements from prior years in business meters reflect continued re-classification of properties in the non-household retail market.

Company area (4Q.18)

15 The area shown is the sum of the water appointed areas for Anglian Water and Hartlepool Water, less the net aggregate areas of water insets.

Number of lead communication pipes replaced for water quality (4Q.19)

16 In 2018/19 we have replaced 469 lead communication pipes, these have been proactively replaced following compliance failures of the lead standard, following notification from a customer that they intend to replace or have replaced their lead pipe and also during planned work on the network.

Total supply side enhancements to the supply demand balance (dry year critical/ peak conditions) (4Q.20 and 4Q.21)

17 We are not reporting any supply side enhancements to the supply demand balance for 2018/19, under both dry year annual average and critical peak conditions.

Total demand side enhancements to the supply demand balance (dry year critical peak conditions) (4Q.22)

18 Demand side enhancement savings have been derived using meter optant data in conjunction with assessed savings from water efficiency measures (these have been based upon per property assumptions).

19 Savings have been assessed for the following programmes.

- 'Bits and Bobs' Service Programme - Assumed savings 50 l/property/day.
- Drop 20 Programme - Assumed savings 25 l/property/day.
- Leakage - Assumed as the difference between present and previous year.
- Enhanced Metering (Optant Metering, Selective Metering) Programme - Assumed savings 50 l/property/day on switching.

20 For the Dry Year Critical Peak conditions, demand management options impacting measured and unmeasured demand have been modified by the following average regional factors (from the Water Resources Management Plan).

- Average Measured Household Critical Peaking Factor (regional average for all Water Resource Zones - WRZs) 1.313.

- Average Unmeasured Household Critical Peaking Factor (regional average for all Water Resource Zones - WRZs) 1.390.

21 These factors have produced the demand management option savings uplifted to reflect critical peak conditions. Note that only measured and unmeasured effects have been factored (not leakage)for the critical peak**.**

22 Note that this year the impact is deemed negative due to the increase in leakage in 2018/2019 from 2017/2018 of 8.58 Ml/d.

Total demand side enhancements to the supply demand balance (dry year annual average conditions) (4Q.23)

23 Demand side enhancement savings have been derived using optant data provided by the metering team in conjunction with assessed savings from measured water efficiency (these have been based upon per property saving assumptions provided by the metering team).

24 Savings have been assessed for the same programmes as the previous line and at the same assumed saving rates.

25 For the Dry Year Annual Average conditions, demand management options impacting measured and unmeasured consumption have been modified by the following average regional factors (from the WRMP).

- Average Measured Household Dry Year Annual Average Factor (regions average for all Water Resource Zones - WRZs) 1.027.

- Average Unmeasured Household Dry Year Annual Average Factor (regional average for all Water Resource Zones - WRZs) 1.34.

26 Note that this year the impact is deemed negative due to the increase in leakage in 2018/2019 from 2017/2018 of 8.58 Ml/d.

Energy consumption - Network Plus, Water Resources and Wholesale (4Q.24-4Q.26)

27 Energy consumption for water has increased by 16,224 MWhs (4.4 per cent) between the 2011/12 baseline and 2018/19.

28 The increase in energy consumption at water operational sites was primarily caused by the rise in water demand, both from our own customers and through bulk water transfers to neighbouring water undertakers, during the warmer and drier than average weather.

29 A number of assumptions have been made in calculating the water energy consumption data:

- For water, we have applied a financial split from regulatory accounts between water resources and network plus for grid electricity consumption.
- We have included energy from renewable sources generated and used on site, including CHP (combined heat and power), wind and solar.
- Grid electricity and fuel (oil and natural gas) used in offices has been included and split equally between water and water recycling.
- Fuel oil is not recorded on our corporate systems in the categories required and therefore the same split used for electricity has been assumed for each fuel type.
- Transport is not recorded in our corporate systems in the categories required and therefore the same split used for electricity has been assumed.

- For transport (fleet fuel) the split between water and water recycling is not measured and therefore we have assumed a 50/50 split.
- We have assumed a 35 per cent thermal efficiency for natural gas consumption in converting to energy output (boilers and CHP).
- Transport for company cars is collected as mileage. We have converted mileage into kWh through using the UKWIR Carbon Accounting Workbook v13 through calculating miles to carbon dioxide equivalent to litres.

Peak factor (4Q.27)

30 The peak factor is calculated using data from our Sourceworks Output Reporting System (SWORPS) before adjustment for Maximum Likelihood Estimation (MLE), which is totalled for the Anglian Water region. Average daily demand during the peak demand week (average day, peak week) has been used to calculate the peaking factor.

Mean zonal compliance (4Q.27)

31 Refer to table 3A, line 18.

Compliance Risk Index (4Q.28)

32 The DWI have adopted a strategy of Risk based Regulation and have developed a new Compliance Risk Index.

33 The estimated Compliance Risk Score is converted into a Company Risk Index by dividing the sum of compliance risk scores for exceedances in zones, at final water points and at reservoirs over 12 months by the company population, total supply volume or combined reservoirs capacity respectively, and summing these categories.

34 In 2018, the provisional total CRI score calculated by the DWI for Anglian Water (inc. Hartlepool) was 2.1, compared to a provisional national average of 3.9.

35 Final 2018 CRI results will be published in the Chief Inspector's Report in July.

Event Risk Index (4Q.29)

36 The DWI has developed a new Event Risk Index (ERI), alongside CRI, for measuring event based risk.

37 The estimated Event Risk Score is calculated based on the event severity, the DWI assessment, the population impacted and the duration of the event. This is converted into a Company Event Risk Index by dividing the sum of the scores for the year by the company population.

38 In 2018, the provisional ERI score calculated by the DWI for Anglian Water (inc. Hartlepool) was 9.1, compared to a provisional national average of 783.5.

39 Interim 2018 ERI results will be published in the Chief Inspector's Report in July, pending the outcome of ongoing event assessments and will be finalised in April 2020.

Volume of leakage above or below the Sustainable Economic Level (4Q.30)

40 For the purposes of this table we have assumed a Sustainable Economic Level of Leakage of 211 Ml/d. For more information please see the commentary to table 3A line 10.

Table 4R - Non-Financial Data - Wastewater Network and Sludge

	Item description	Unit	Current year
A	**Wastewater network**		
1	Connectable properties served by s101A schemes completed in the report year	nr	399
2	Number of s101A schemes completed in the report year	Nr	5
3	Total pumping station capacity	kW	121,868
4	Number of network pumping stations	nr	6,313
5	Total number of sewer blockages	nr	40,575
6	Total number of gravity sewer collapses	nr	331
7	Total number of sewer rising main bursts / collapses	nr	134
8	Number of combined sewer overflows	nr	1,257
9	Number of emergency overflows	nr	836
10	Number of settled storm overflows	nr	372
11	Sewer age profile (constructed post 2001)	km	1,961
12	Volume of trade effluent	Ml/yr	22,592.46
13	Volume of wastewater receiving treatment at sewage treatment works	Ml/yr	624,578.56
14	Length of gravity sewers rehabilitated	km	29
15	Length of rising mains replaced or structurally refurbished	km	13
16	Length of foul (only) public sewers	km	19,004
17	Length of surface water (only) public sewers	km	11,503
18	Length of combined public sewers	km	10,317
19	Length of rising mains	km	4,538
20	Length of other wastewater network pipework	km	6
21	Total length of "legacy" public sewers as at 31 March	km	45,369
22	Length of formerly private sewers and lateral drains (s105A sewers)	km	31,200
B	**Sludge**		
23	Total sewage sludge produced, treated by incumbents	ttds/ year	151.0
24	Total sewage sludge produced, treated by 3rd party sludge service provider	ttds/ year	0.0
25	Total sewage sludge produced	ttds/ year	151.0
26	Total sewage sludge produced from non-appointed liquid waste treatment	ttds/ year	2.6
27	Percentage of sludge produced and treated at a site of STW and STC co-location	%	28.84
28	Total sewage sludge disposed by incumbents	ttds/ year	97.6
29	Total sewage sludge disposed by 3rd party sludge service provider	ttds/ year	0.0
30	Total sewage sludge disposed	ttds/ year	97.6

	Item description	Unit	Current year
31	Total measure of intersiting 'work' done by pipeline	ttds*km/year	35
32	Total measure of intersiting 'work' done by tanker	ttds*km/year	2,181
33	Total measure of intersiting 'work' done by truck	ttds*km/year	5,113
34	Total measure of intersiting 'work' done (all forms of transportation)	ttds*km/year	7,328
35	Total measure of intersiting 'work' done by tanker (by volume transported)	m3*km/year	90,597,941
36	Total measure of 'work' done in sludge disposal operations by pipeline	ttds*km/year	0
37	Total measure of 'work' done in sludge disposal operations by tanker	ttds*km/year	0
38	Total measure of 'work' done in sludge disposal operations by truck	ttds*km/year	5,164
39	Total measure of 'work' done in sludge disposal operations (all forms of transportation)	ttds*km/year	5,164
40	Total measure of 'work' done by tanker in sludge disposal operations (by volume transported)	ttds*km/year	0
41	Chemical P sludge as percentage of sludge produced at STWs	%	48.40

s101A Schemes Completed In The Report Year (4R.1 and 4R.2)

1 In 2018/19 we completed five Section 101a schemes, enabling connection to main sewerage services to a total of 399 properties for the first time. These schemes are shown in the table below.

Scheme Location	No. connectable properties
Bridgham	99
Burston	106
Hillington	99
Matishall	32
Woodwalton	63

Capacity and number of network pumping stations (4R.3 and 4R.4)

2 The number of pumps, rated power for each pump, location and asset status have been used where this information was held in corporate databases. The rated power of the remaining pumps, where data was not currently centrally held, was estimated through extrapolation based on site annual energy consumption (and pump hours run where available). The number of sites was calculated based on this more granular pump specific asset data.

Total number of sewer blockages (4R.5)

3 The total number of blockages has increased slightly on 2017/18. In 2018/19 we had 40,575 blockages compared to 40,371 in 2017/18. This is due to a marginal increase (c. 0.5%) in the number of blockages on transferred sewers in the reporting period.

Total number of sewer rising main bursts / collapses (4R.6 and 4R.7)

4 There were 101 reportable collapses on public sewers and 230 on transferred sewers, totalling 331 for 2018/19.

5 There were 113 reportable bursts on public rising mains and 21 on transferred rising mains, totalling 134 for 2018/19.

6 The total of lines 4R.6 and 4R.7 differ from the total number of collapses and bursts reported in table 3B because 3B data excludes collapses and bursts on sewers that transferred under the 2011 regulations.

Numbers of overflows (4R.8-4R.10)

7 Figures for 2018/19 are taken from source databases at the end of the reporting year.

8 There are a number of potentially unpermitted CSO's (combined sewer overflows). As at the end of 2018/19 449 potentially unpermitted CSO's had been identified. Following investigations we have now confirmed that 48 of these actually exist and need an Environmental Permit. We have therefore included this figure in the total number of CSO's. In addition we have identified a further 86 CSO's during the year that no longer exist and where the permit has been surrendered. The change in the number of CSO's compared with 2017/18 is therefore due to the reduction in our estimate of the number of unpermitted CSO's and the surrender of the permits for those CSO's which no longer exist.

Sewer age profile (constructed post 2001) (4R.11)

9 The best estimated year laid of every mapped sewer has been maintained. Our approach is iterative based on our corporate systems, historical development polygons, deed dates (for non-infra sites to sub-catchments) and the length weighted median year for each material.

10 These lengths have increased slightly on last year, with 67kms more lengths in this age band when compared to 2017/18.

11 We have assumed that the age profile of modelled lengths of section 24 and transferred sewers is spread across the age bands and have used a weighted average method.

Volume of wastewater receiving treatment at sewage treatment works (4R.13)

12 For smaller WRCs (serving less that 250 population equivalent) an estimate has been made of the flow discharged per year. The numbers for this line were then produced by combining the separate values for the measured flows from larger WRCs with the estimated flow from the smaller WRCs.

Length of gravity sewers rehabilitated (4R.14)

13 In 2018/19 we rehabilitated 28.65km of gravity sewers to grade three or higher. This reduction comes as the AMP6 programme of rehabilitation draws to a close and has halved its output to 9km from 18km in 2017/18.

Length of rising mains replaced or structurally refurbished (4R.15)

14 In 2018/19 we refurbished or replaced 13.43 km of rising mains which includes 8.71 km of diversions as a result of the Highways Agency's work on the A14 trunk road upgrade.

Length of wastewater network pipework (4R.16-4R.21)

15 Our modelled estimate of section 24 sewer lengths have been included in our reported sewer lengths since 2002/03 and therefore are included in these lines. Our modelled length includes an assessment of the surface water sewers and we have assumed, given the typical sewer practice at the time, that the remainder are combined sewers.

16 Lines 16-19 have all seen increases for 2018/19, with foul sewer lengths seeing the largest increase of 50km from 2017/18. Combined sewers have remained stable with a 1km increase.

17 Rising mains include both pumped and vacuum movement methods, and there has been a 42km increase in these lengths in 2018/19.

18 In line 4R.20 we have included a length of 6.325km which is for a sludge main.

Length of formerly private sewers and lateral drains (s.105A sewers) (4R.22)

19 We are reporting our total estimated length of modelled transferred sewers. These are 26,700km of laterals and 4,500km of private drains. This estimate is based on the findings of a number of studies we undertook prior to 2011.

Total sludge produced, treated by incumbents (4R.23)

20 The number reported was calculated in the same way as in APR 2017/18. At present this is at the point of treatment (e.g. thickened blended sludge entering sludge treatment) rather than at the boundary of Network Plus and Bioresources. We have included investments to measure at the Network Plus and Bioresources boundary points in our PR19 business plan. Cross boundary raw cake imports from Yorkshire Water Services (0.562 thousand tonnes of dry solids, ttds) have been excluded in line with the line definition. The increase on the prior year in the amount of sludge treated is due to improvements in the operational management of our sludge treatment centres (STCs), including creation of a separate sludge management team.

Total sewage sludge produced from non-appointed liquid waste treatment (4R.26)

21 The only non-appointed liquid waste we have received in the reporting period is domestic waste (cess and septic tank contents) . We have calculated the sludge attributable to this waste by taking the total wet tonnage recorded and applying the average Total Suspended Solids (TSS) of randomly sampled loads at the receiving water recycling centres (8,404.51 mg/l, n=721).

Percentage of sludge produced and treated at a site of STW and STC co-location (4R.27)

22 In accordance with the clarified reporting requirement in RAG 4.08, we have deemed sludge to be treated at a site of WRC and STC co-location only when full sludge treatment is present. That is, we have not counted raw dewatering sites. We have therefore counted our nine advanced anaerobic digestion (AD) sites, one conventional AD site and two lime plants.

Total sewage sludge, disposed by incumbents (4R.28)

23 The number reported was calculated in the same way as in 2017/18 in line with the definition on the basis of treated material hauled to agricultural land (but not necessarily spread), into composting and land reclamation (both zero this year). This number includes the treated equivalent (advanced digested at Pyewipe and Great Billing) of the raw sludge received from Yorkshire Water Services (0.823 ttds). The small reduction in the amount of sludge disposed compared to the prior year is because we have digested more sludge, treated less with liming and not undertaken any co-composting.

Total sludge disposed by third party sludge service provider (4R.29)

24 To one decimal place the reported number is zero. However, we did provide a small amount of activated sludge (40 m3) from Cambridge WRC to Etex Ltd. in Meldreth for reseeding their effluent treatment plant. This equates to 0.0028ttds and therefore is not material. In a similar way it has not been reported in Line 37 as the actual number is 0.0812 ttds*km/year. We have included this in the commentary in the interest of completeness.

Total measure of intersiting 'work' done by pipeline (4R.31)

25 We transfer sludge by underground pipeline a measured distance of 6.325 km from sludge holding tanks at Southend WRC to centrifuge feed tanks at Rochford WRC. This is the only pumped transfer. We have not included this in Line 25 as it is a raw sludge transfer which goes elsewhere for treatment. This line has been calculated in the same way as for APR 2018 except we did de-water some sludge at Southend WRC (1.111 ttDS) in the reporting period, which was transported by road direct to an STC and so this has been excluded from the calculation.

Total measure of intersiting 'work' done by tanker (4R.32)

26 We measure tankering work volumetrically; therefore to convert cubic metres to tonnes of dry solids (tds) we have used an average dry solids content of 2.42 per cent. This is the average of measured data for the reporting period. Line 35 is the equivalent number unadjusted for dry solids content.

Total measure of intersiting 'work' done by truck (4R.33)

27 We have included all raw cake transfers between dewatering centres and STCs in this line. This number has increased as a result of the closure of our two remaining permanent lime plants at Boston and Thetford during the reporting period.

Total measure of intersiting 'work' done by tanker (by volume transported) (4R.35)

28 We have reported this information from the same base information as reported in line 4R.9. The reported volumes are taken from routine records of tankered movements.

Total measure of 'work' done in sludge disposal operations by tanker and by volume transported (4R.37 and 4R.40)

29 We have not passed any liquid sludge to third parties in the reporting year. As our entire disposal to agricultural land, land reclamation (when applicable) and composting is completed as cake, these are zero entries.

Total measure of 'work' done in sludge disposal operations by truck (4R.38)

30 Treated cake that is transferred to intermediate storage, as well as from STCs direct to the landbank, has been included. For haulage from STCs to landbank, estimated road distances (km) have been calculated on straight line distance x 1.35, which we have assessed as the relationship between straight line and road distance between STCs and its landbank. All other reported lines use measured road distance.

Chemical P sludge as percentage of sludge produced at STWs (4R.41)

31 The number reported was calculated in the same way as in APR 2018, in line with the definition.

32 We have not included sludge arising from P (phosphorus) removal at Whitlingham WRC (Norwich), either now or previously as this site has a plant which removes P biologically and therefore we do not dose chemicals there. Similarly, we do not include iron salt dosing at Clacton WRC which is for enhanced settlement.

Table 4S - Non-Financial Data - Sewage Treatment

	Line description	Unit	Treatment categories							
			Primary	Secondary		Tertiary				Total
				Activated Sludge	Biological	A1	A2	B1	B2	
A	**Load received at sewage treatment works in 2018-19**									
1	Load received by STWs in size band 1	kg BOD5/day	16	386	1,462	227	8	422	0	2,521
2	Load received by STWs in size band 2	kg BOD5/day	0	432	1,327	285	21	844	18	2,927
3	Load received by STWs in size band 3	kg BOD5/day	0	2,073	6,318	1,433	257	6,724	614	17,419
4	Load received by STWs in size band 4	kg BOD5/day	0	9,394	18,696	4,473	3,343	14,236	8,587	58,730
5	Load received by STWs in size band 5	kg BOD5/day	0	10,521	6,502	5,493	14,121	3,206	27,565	67,407
6	Load received by STWs above size band 5	kg BOD5/day	0	105,506	8,948	17,967	122,982	-	25,550	280,952
7	**Total load received**	kg BOD5/day	16	128,311	43,254	29,878	140,732	25,432	62,334	429,957
8	Load received from trade effluent customers at treatment works	kg BOD5/day								45,007
B	**Number of sewage treatment works at 31 March 2019**									
9	STWs in size band 1	nr	6	53	302	28	1	50	-	440
10	STWs in size band 2	nr	0	18	57	12	1	35	1	124
11	STWs in size band 3	nr	0	27	96	22	3	99	8	255
12	STWs in size band 4	nr	0	27	70	15	8	54	28	202
13	STWs in size band 5	nr	0	9	7	5	13	3	28	65
14	STWs above size band 5	nr	0	16	3	3	20	-	7	49
15	**Total number of works**	nr	6	150	535	85	46	241	72	1,135

C	**Population equivalent**		
16	Current population equivalent served by STWs	000	6,936.997
17	Current population equivalent served by discharge relocation schemes	000s	-
18	Current population equivalent served by filter bed STWs with tightened/new P consents	000s	-
19	Current population equivalent served by activated sludge STWs with tightened/new P consents	000s	-
20	Current population equivalent served by groundwater protection schemes	000s	0.000
21	Current population equivalent served by STWs with a Flow1 driver scheme	000s	0.000
22	Current population equivalent served by STWs with tightened/new N consents	000s	0.000
23	Current population equivalent served by STWs with tightened/new sanitary parameter consents	000s	263.063
24	Current population equivalent served by STWs with tightened/new UV consents	000s	0.000
25	Population equivalent treatment capacity enhancement	000s	18.000

	Line description	Unit	Treatment works consents															
			Phosphorus					BOD5					Ammonia					
			<=0.5mg/l	>0.5 to <=1mg/l	>1mg/l	No permit	Total	<=7mg/l	>7 to <=10mg/l	>10 to <=20mg/l	>20mg/l	No permit	Total	<=1mg/l	>1 to <=3mg/l	>3 to <=10mg/l	>10mg/l	No permit	**Total**
A	**Load received at sewage treatment works in 2018-19**																	
1	Load received by STWs in size band 1	kg BOD5/day	0	0	0	2,505	2,505	-	0	216	252	2,037	2,505	0	0	99	233	2,173	2,505
2	Load received by STWs in size band 2	kg BOD5/day	0	23	88	2,794	2,904	-	52	906	1,633	314	2,904	0	21	291	633	1,959	2,904
3	Load received by STWs in size band 3	kg BOD5/day	0	1147	775	15,336	17,259	75	591	8,706	7,844	43	17,259	0	491	5,212	4,884	6,673	17,259
4	Load received by STWs in size band 4	kg BOD5/day	0	8,103	5,911	43,933	57,947	191	10,177	27,732	19,572	274	57,947	1,319	6,545	26,277	11,886	11,919	57,947
5	Load received by STWs in size band 5	kg BOD5/day	0	10,557	33,429	23,421	67,407	-	10,798	29,651	26,958	0	67,407	2,564	7,067	35,782	9,758	12,236	67,407
6	Load received by STWs above size band 5	kg BOD5/day	0	117,498	34,430	129,024	280,952	-	43,030	126,723	111,199	0	280,952	6,711	60,935	114,864	39,099	59,343	280,952
7	**Total load received**	kg BOD5/day	0	137,327	74,633	217,014	428,975	266	64,648	193,934	167,459	2,668	428,975	10,595	75,059	182,524	66,494	94,303	428,975
8	Load received from trade effluent customers at treatment works	kg BOD5/day																	
B	**Number of sewage treatment works at 31 March 2019**																	
9	STWs in size band 1	nr	0	0	0	437	437	-	0	17	25	395	437	0	0	7	23	407	437
10	STWs in size band 2	nr	0	1	4	118	123	-	2	38	67	16	123	0	1	13	27	82	123
11	STWs in size band 3	nr	0	14	9	230	253	1	8	125	118	1	253	0	7	67	74	105	253
12	STWs in size band 4	nr	0	27	14	158	199	1	30	99	68	1	199	3	21	89	42	44	199
13	STWs in size band 5	nr	0	11	34	20	65	-	10	29	26	0	65	3	7	35	10	10	65
14	STWs above size band 5	nr	0	12	14	23	49	-	8	18	23	0	49	1	12	16	7	13	49
15	**Total number of works**	nr	0	65	75	986	1,126	2	58	326	327	413	1,126	7	48	227	183	661	1,126

Loads received (4S.1-4S.8)

1 We have calculated the loads using a process consistent with how we historically reported tables 17c and 17d in the June Return.

2 The size banding of the individual WRCs has been determined using the total resident population, which is comprised of domestic population, tankered waste (from septic tanks and cesspools) and trade effluent loads. Non-resident population has not been included when determining the size banding of the works, in line with the guidance.

3 The treatment types at our WRCs are assumed to be the same as prior years, unless evidence from operations has been provided. There have been no changes to treatment types in 2018/19.

4 The loads received numbers in lines 4S.1-4S.7 include non-resident population, but exclude the tankered imports from septic tanks and cesspools. This is consistent with our approach to reporting historically and in line with previous Ofwat guidance JR08/004 and RAG 4.08.

5 The numbers in these lines include loads from nine additional WRCs, which belong to other water companies but to which our customers drain and we receive a charge for the treatment of this load. These WRCs are summarised below.

List of Works Owned by other Companies

WRC Name	2018/19 PE (Population Equivalent)	2018/19 Load	Size Band	Treatment Type
Alkborough STW	374	22.46	2	SB
Brentwood Nag Head Ln STW Tham	6015	360.87	4	TB1
Cheveley Park STW	20	1.13	1	PRM
Stansted Mountfichet STW	2180	130.77	4	TB1
Stevenage STW	1474	88.45	3	TA2
Gt Whelnetham-Stanfld Rd STW	7	0.41	1	SB
Halse STW	1199	71.93	3	SB
Severn Trent STW	237	14.21	1	SB
Wingrave STW	4862	291.71	4	SB

6 Consent information is provided by an extract from our CHRIS database, which is a live document and holds all of the consent limits for the WRCs the company operate. Because we do not have the consent information for the nine WRCs which are not in our control, we have not assigned these loads to any consent banding, and so they are excluded from the consents tables.

Number of works (4S.9-4S.15)

7 The number of WRCs includes nine additional WRCs which belong to other water companies, but to which our customers drain. Details of these WRCs can be found in the table above.

8 As with lines 4S.1-7, we have omitted these nine WRCs from the consents table.

Phosphorus limits

9 Our quality assurance processes have revealed a significant increase from 2017/18 in the number of WRCs and loads with phosphorus limits of 0.5 – 1mg/l, and a corresponding reduction in the number of WRCs and loads with phosphorus limits of >1mg/l. Our

investigation has shown that in 2017/18 we allocated WRCs with phosphorus limits of 1mg/l to the >1mg/l column whereas in this APR we have correctly allocated them to the 0.5 – 1mg/l column. The corrected difference between the two years is minimal; the only WRC whose phosphorus limit changed during 2018/19 was Great Dunmow WRC where the phosphorus limit changed from 6mg/l to 5mg/l.

BOD limits

10 Our quality assurance processes also revealed unusual movements from 2017/18 in the number of WRCs and loads with BOD limits of <=7mg/l. On investigation, we have found that in 2017/18 we incorrectly allocated twelve WRCs to the <=7mg/l column which should have been allocated to other columns. The same issue also caused one WRC to be incorrectly allocated to the 7 – 10mg/l column. The corrected differences between the two years are in fact minimal.

Current population equivalent served by discharge relocation schemes (4S.17)

11 There were no schemes in 2018/19 under this driver.

Current population equivalent served by filter bed STWs with tightened/new P consents (4S.18)

12 We have completed four schemes under this driver at Ketton, Long Melford, Pulham St Mary and Shimpling but these will not be signed off as complete by the Environment Agency until March 2020 as the permit conditions become active. We have therefore reported a zero PE for 2018/19.

Current population equivalent served by activated sludge STWs with tightened/new P consents (4S.19)

13 We have completed three obligations that could qualify for this driver but two of those, both at Great Dunmow, are reported under line 23, and the third at Easton on the Hill is not yet signed off by the Environment Agency so is not therefore included, and a zero PE is reported.

Current population equivalent served by groundwater protection schemes, STWs with a Flow1 driver scheme or STWs with tightened/new N consents (4S.20-22)

14 No schemes under these drivers were expected or delivered this year.

Current population equivalent served by STWs with tightened/new sanitary parameter consents (4S.23)

15 Two obligations at Great Dunmow, one at Broadholme and one at Chalton were completed in 2018/19. The reported PE figure is 263,063. We have only included the PE of 9,343 from Great Dunmow once.

Current population equivalent served by STWs with tightened/new UV consents (4S.24)

16 There were no schemes delivered during the reporting year which involved the tightening, or introduction, of new or tightened consent conditions for microbiological parameters to meet the requirements of the EU Shellfish Waters or revised Bathing Water Directives.

Population equivalent treatment capacity enhancement (4S.25)

17 In 2018/19 the population equivalent capacity added was 18,000. The enhanced WRCs were Broadholme and Great Dunmow.

Table 4T - Non-Financial Data - Sludge Treatment

	Item description	by Incumbent %	by 3rd party sludge service providers %
A	**Sludge treatment process**		
1	% Sludge - untreated	0.0%	0.0%
2	% Sludge treatment process - raw sludge liming	7.3%	0.0%
3	% Sludge treatment process - conventional AD	1.9%	0.0%
4	% Sludge treatment process- advanced AD	90.9%	0.0%
5	% Sludge treatment process - incineration of raw sludge	0.0%	0.0%
6	% Sludge treatment process - incineration of digested sludge	0.0%	0.0%
7	% Sludge treatment process - phyto-conditioning/composting	0.0%	0.0%
8	% Sludge treatment process - other (specify)	0.0%	0.0%
9	**% Sludge treatment process - Total**	**100.0%**	**0.0%**
B	**(Un-incinerated) sludge disposal route**		
10	% Sludge disposal route - landfill, raw	0.0%	0.0%
11	% Sludge disposal route - landfill, partly treated	0.0%	0.0%
12	% Sludge disposal route - land restoration / reclamation	0.0%	0.0%
13	% Sludge disposal route - sludge recycled to farmland	100.0%	0.0%
14	% Sludge disposal route - other (specify)	0.0%	0.0%
15	**% Sludge disposal route - Total**	**100.0%**	**0.0%**

Sludge treatment

1 The sludge produced data, to which the percentages reported in lines 4T.1 to 4T.9 relate, are the same as those reported in table 4R line 26. Sums in the block may not add to 100% only due to rounding.

% Sludge -untreated (4T.1)

2 We would normally include here raw sludge that was disposed to land reclamation without treatment. However, in 2018/19 there was no such activity carried out.

% Sludge – raw sludge liming / conventional AD / advanced AD (4T.2-4T.4)

3 Our re-focus on Sludge Treatment Centre (STC) performance has allowed us to process 91% of our sludge through STCs with advanced anaerobic digestion (up from 84% in 2017/18) and to close our two remaining permanent lime plants (Boston in July 2018 and Thetford in September 2018). Occasional peak lopping of raw sludge cake loads could still be undertaken by liming.

% Sludge treatment process - phyto-conditioning/composting (4T.7)

4 During 2018/19 we did not put any treated biosolids into co-compost. In any case, it would not have been included here to avoid double counting as it has already undergone treatment and been included in lines 4T.3 and 4T.4 as appropriate.

Sludge disposal route

5 The sludge produced data, to which the percentages reported in lines 4T.10 to 4T.15 relate, are the same as those reported in 4R line 30. Sums in the block may not add to 100% only due to rounding.

% Sludge disposal route - other (4T.14)

6 In 2017/18 we included digested cake disposals into co-compost in the 'by incumbent' section here (0.2%). However, as confirmed above, we did not put any treated biosolids into co-compost during 2018/19. We have previously included sludge that went to third parties for activities such as digester seeding or for research projects in the 'by third party sludge service providers' sections. However, no sludge went to third parties in the 2018/19 reporting year.

Table 4U - Non-Financial Data - Properties, Population and Other - Wholesale Wastewater

	Item description	Unit	Current year
A	**Properties and population**		
1	Residential properties connected during the year	000	27.514
2	Business properties connected during the year	000	1.831
3	Residential properties billed unmeasured sewage	000	499.845
4	Residential properties billed measured sewage	000	2,068.839
5	Residential properties billed for sewage	000	2,568.684
6	Business properties billed unmeasured sewage	000	2.400
7	Business properties billed measured sewage	000	111.778
8	Business properties billed for sewage	000	114.178
9	Void properties	000	108.617
10	Total number of properties	000s	2,791.479
11	Resident population	000	6,148.203
12	Non-resident population	000	267.627
B	**Other**		
13	Energy consumption - network plus	MWh	335,722.511
14	Energy consumption - sludge	MWh	146,306.336
15	Energy consumption - wholesale	MWh	482,028.848
16	Population resident in National Parks, SSSIs and Areas of Outstanding Natural Beauty (AONBs)	000s	72.000
17	Total sewerage catchment area	km2	4,154
18	Designated bathing waters	nr	49
19	Number of intermittent discharge sites with event duration monitoring	nr	337
20	Number of monitors for flow monitoring at STWs	Nr	0
21	Number of odour related complaints	nr	3,532
22	Volume of storage provided at CSOs, storm tanks, etc to meet spill frequency objectives	m3	0
23	Total volume of network storage	m3	10,265,605

The data reflect switching from unmeasured to measured billing plus new connections.Residential properties billed (4U.3-5)

Business properties billed (4U.6-4U.8)

1 In these lines we report the number of business properties for which we have reported revenue. They were not billed by Anglian Water. We exited the non-household retail market at the start of 2017/18 so all our connected non-household properties are now billed by other retailers.

Void properties (4U.9)

2 The number of void properties has risen in comparison with the previous year, with a small reduction in household voids as a result of ongoing data maintenance but an increase in non-household voids. This increase in non-household voids is due to more properties being transferred to void by retailers along with additional properties being classified as non-household during the year of which a significant proportion were void.

Resident population (4U.11)

3 Population is calculated, based upon Anglian Water SAP customer information and ONS, population and local authority household data. Population is derived using the estimation of households we serve, as a percentage of the Department for Communities and Local Government (DCLG) totals, applied to the ONS Local Authority and Unitary Authority (LAUA) population assessments. Additional account is taken of the communal population, which is derived using census data.

4 The estimate of household population is based on the 2012 (2016 update) sub-national population and the December 2018 household projections from the ONS. Population projections have been amended to reflect the current ONS mid-year estimates revision.

5 We apportion the data for the districts we serve to derive an estimate of the wastewater population in the Anglian Water region.

6 The estimate of non-household population is based on the latest census data published by the ONS. This 'communal' population covers prisons, care homes and military bases. These projections have been revised in line with the paper *'Updating the Department for Communities and Local Government's Household Projections'*, specifically annex 2 *'Improving Institutional Population Estimates and Projections'*. In addition we have added an estimate of people resident in mixed properties.

7 It is noted that there appears to have been a significant increase in population this year, partly due to changes arising from the updated government tables (especially the revised household projections). The increase has been tested with both the previous and revised tables. The increase has been attributed to a decrease in the official household projection figures which, along with an increase in population, has led to increased occupancy rates. When applied to our billing property totals, these higher occupancy rates have caused the population total to be increased by just over 1% (approximately 90,000 for water recycling). This has then been added to the population rises due to the increase in properties this year to give overall rises in population of approximately 140,000 for water recycling.

Energy consumption - Network Plus, Sludge and Wholesale (4U.13-4U.15)

8 As measured by the reporting requirements in RAG 4.08, energy consumption for water recycling has reduced by 37,461 MWhs (7.2 per cent) in 2018/19 from a 2011/12 baseline.

9 Drier than average weather during 2018/19 and energy efficiency savings at some of our water recycling centres have both contributed to the reduction in energy consumption.

10 A number of assumptions have been made in calculating the water recycling energy consumption data:

- For water recycling, we have applied a financial split from regulatory accounts between sludge and network plus for grid electricity consumption.
- We have included energy from renewable sources generated and used on site, including combined heat and power (CHP), wind and solar.
- Grid electricity and fuel (oil and natural gas) used in offices has been included and split equally between water and water recycling.
- Fuel oil is not recorded on our corporate systems in the categories required and therefore the same split used for electricity has been assumed for each fuel type, with the exception of gas oil delivered to water recycling sites

- An assumption has been made that 90 per cent of gas oil delivered to water recycling sites is used for CHP boilers and therefore allocated to the sludge line. In previous Annual Performance Reports (APRs), fuel oil delivered to water recycling operations had adopted the same split as electricity (e.g. 83 per cent network plus and 17 per cent to sludge in 2017/18). However, this has recently been updated to reflect a more accurate approach which is also used for our allocation of costs. A revised split of 10 per cent allocated to network plus and 90 per cent allocated to sludge has been used
- Transport is not recorded in our corporate systems in the categories required. This is with the exception of regional tankering services fleet Biosolids haulage which has been allocated entirely to the sludge line. For the remaining transport, the same split used for electricity has been assumed.
- For transport (fleet fuel) the split between water and water recycling is not measured and therefore we have assumed a 50/50 split.
- Subcontracted transport (sludge and cake) has not been included, only directly operated fleet vehicles.
- We have assumed a 35 per cent thermal efficiency for natural gas consumption in converting to energy output (boilers and CHP).
- Transport for company cars is collected as mileage. We have converted mileage into kWh using the UKWIR Carbon Accounting Workbook v13 through calculating miles to carbon dioxide equivalent to litres.

Population resident in National Parks, SSSIs and Areas of Outstanding Natural Beauty (AONBs) (4U.16)

11 The population resident in Areas of Outstanding Natural Beauty (AONB), Sites of Special Scientific Interest (SSSI), and National Parks was estimated using the following approach:

AONB

12 There are four AONBs within Anglian Water's Water Recycling area. These are Lincolnshire Wolds, Norfolk Coast, Suffolk Coast and Heath and Dedham Vale. Each AONB publishes an estimate of population within its area. We quote the figures below, along with the URL of the source data (URLs last accessed May 2018).

Lincolnshire Wolds	10,701	http://www.lincswolds.org.uk/library/annual_review1_16.17.pdf
Norfolk Coastal	13,235	http://www.norfolkcoastaonb.org.uk/mediaps/pdfuploads/pd003722.pdf
Suffolk Coast	26,191	http://www.suffolkcoastandheaths.org/assets/AONB-Management-Plan-20132018.pdf
Dedham Vale	15,000	http://www.dedhamvalestourvalley.org/assets/About-Us/DV-AONB-infographic.pdf
Total	**65,127**	

13 The Norfolk Coast figure is conservative as it covers only parishes purely within the AONB. The Suffolk Coast figure is computed using an average household size of 2.4, as the Suffolk Coast report contains household numbers rather than population numbers for two Local Authority areas.

SSSI

14 SSSIs overlap extensively with AONBs. Hence there is considerable potential for double counting of the population. As SSSIs tend to be carefully defined to exclude domestic property, the incremental population in SSSIs is small. We have made an assumption that it represents 1 per cent of the total AONB population. This is likely to be generous.

National Park

15 The only National Park in Anglian Water's area is the Broads. The Broads Authority estimates the population within the National Park at 6,300. (http://www.broads-authority.gov.uk/learning/facts-and-figures).

Total sewerage catchment area (4U.17)

16 The figure quoted for the sewered area covers the aggregate area of all our sewered areas.

Designated bathing waters (4U.18)

17 There were 49 designated bathing waters in the region we serve in 2018. They are listed in the commentary to table 3A. The designation of new bathing waters is undertaken by the Local Authority and we have no control over designations.

Number of intermittent discharge sites with event duration monitoring (EDM) (4U.19)

18 The original EDM2 driver, of the Environment Agency's National Environment Programme, named 336 EDM obligations for delivery during 2018/19. Of these named obligations we have actually installed or upgraded 276 EDM's. For the remaining 60 overflows we have established that they have either been blocked off because they no longer operate as storm overflows or the network has been redesigned and an EDM is no longer required. Furthermore, the EA requested the installation of one extra EDM during the reporting year on a storm overflow at Lowestoft, Commercial Road. All 337 obligations have been signed off by the EA as each site will have had capital spend associated with survey and investigation. We have therefore included a figure of 337 for this line.

Number of odour related complaints (4U.21)

19 Odour complaints rose slightly last year, as over the region there was a long, warm and dry summer. This would have the effect of reducing sewer flows, which leads to increasing sewer septicity and more odour production.

Total volume of network storage (4U.23)

20 This line has been calculated assuming that each length of sewer and rising main is an enclosed volume, using an average of known diameters to calculate the volume for different shaped sewers.

21 There is insufficient data to make an assessment on all offline and online network storage. However many storage facilities have already been captured in our corporate systems as large diameter pipes, which are accounted for in the calculations.

22 There has been a 0.23 per cent increase in capacity in 2018/19 from the capacity quoted in 2017/18.

Table 4V - Operating Costs - Water Resources

	Item description	Unit	Impounding Reservoir	Pumped Storage	River Abstractions	Ground - water, excluding MAR water supply schemes	Artificial Recharge (AR) water supply schemes	Aquifer Storage and Recovery (ASR) water supply schemes	Total
	Water resources								
A	**Opex analysis**								
1	Power	£m	0.009	0.119	4.865	4.349	-	-	9.342
2	Income Treated as negative expenditure	£m	-	-	(0.090)	(0.134)	-	-	(0.224)
3	Abstraction charges/ discharge consents	£m	0.422	3.570	1.754	4.200	-	-	9.946
4	Bulk supply	£m	-	-	-	-	-	-	-
	Other operating expenditure		-	-	-	-	-	-	-
5	- Renewals expensed in year (Infrastructure)	£m	-	-	-	-	-	-	-
6	- Renewals expensed in year (Non-Infrastructure)	£m	-	-	-	-	-	-	-
7	- Other operating expenditure excluding renewals - direct	£m	0.060	0.244	2.125	3.411	-	-	5.840
8	- Other operating expenditure excluding renewals - indirect	£m	0.311	0.442	3.413	3.614	-	-	7.780
9	Total functional expenditure	£m	0.802	4.375	12.067	15.440	-	-	32.684
10	Local authority and Cumulo rates	£m	0.046	0.180	0.098	2.719	-	-	3.043
11	Total operating expenditure (excluding 3rd party)	£m	0.848	4.555	12.165	18.159	-	-	35.727
12	Depreciation	£m	0.189	3.219	1.932	3.177	-	-	8.517
13	Total operating costs (excluding 3rd party)	£m	1.037	7.774	14.097	21.336	-	-	44.244

	Item description	Unit	Water resources	Raw water distribution	Water treatment	Treated water distribution	Total
B	**Other expenditure - wholesale water**						
14	Employment costs - directly allocated	£m	3.296	0.536	8.964	21.524	34.320
15	Employment costs - indirectly allocated	£m	6.105	1.153	8.885	22.802	38.945
16	Number FTEs consistent with 4V.9 above	Nr	70	11	190	457	728
17	Number FTEs consistent with 4V.10 above	Nr	130	24	189	484	827
18	Costs associated with Traffic Management Act	£m	-	-	-	1.300	1.300
C	**Service charges**						
19	Canal & River Trust service charges and discharge consents	£m	-	-	-	-	-
20	Environment Agency service charges/ discharge consents	£m	9.946	-	0.545	-	10.491
21	Other service charges / permits	£m	-	-	-	-	-
22	Statutory water softening	£m	-	-	-	-	-

Operating costs analysis - water resources (4V.1-4V.5)

1 With the exception of local authority rates which are apportioned based on direct costs. the allocation to activity is based on management assessment carried out at an individual site level.

2 Total operating expenditure of £35.7 million in in line with the prior year in real terms, with power costs increasing by £1.5 million due to a combination of an increase in wholesale prices and the additional pumping required to deal with the hot, dry summer. The increase in power costs was almost entirely offset by a combination of smaller reductions across direct, indirect, abstraction and business rates costs.

Employment costs and FTEs - directly allocated (4V.9 and 4V.11)

3 Although some direct opex employment costs can be allocated to service, many front line employees work across operational boundaries and therefore, where not directly allocated, we have used a management assessment of time spent by service. We have nevertheless classed all employees within this category as direct.

4 The number of direct FTEs is assessed from the total employment costs using an average cost per employee.

Employment costs and FTEs - indirectly allocated (4V.10 and 4V.12)

5 Indirectly attributed employment costs are made up of indirect operational employees, employees engaged on capital schemes and general and support employees.

6 General and support employment costs are allocated by an appropriate cost driver as part of our regulatory accounts process.

7 Indirect operational employment costs and employment costs in relation to capex activity are allocated as a proportion of direct employment costs.

8 The number of indirect FTEs is assessed from the total employment costs using an average cost per employee.

Costs associated with Traffic Management Act (4V.13)

9 Reported costs reflect costs directly charged to treated water distribution jobs, including permits and fixed penalty notices.

Service Charges

Environment Agency service charges/ discharge consents (4V.15)

10 Water resources reflects abstraction charges reported under 'Other direct operating expenditure' (4V.4).

11 The costs reported under Water Treatment reflect discharges made from water treatment works.

Table 4W - Operating Costs - Sludge Treatment

Line	Item description	Unit	DPs	Pipeline	Tanker	Truck	Total
A	**Sludge transport method**						
1	Power	£m	3	0.040	0.003	-	**0.043**
2	Income Treated as negative expenditure	£m	3	-	-	-	**-**
3	Discharge consents	£m	3	-	-	-	**-**
4	Bulk supply	£m	3	-	-	-	**-**
	Other operating expenditure			-	-	-	**-**
5	- Renewals expensed in year (Infrastructure)	£m	3	-	-	-	**-**
6	- Renewals expensed in year (Non-Infrastructure)	£m	3	-	-	-	**-**
7	- Other operating expenditure excluding renewals - direct	£m	3	0.018	17.146	-	**17.164**
8	- Other operating expenditure excluding renewals - indirect	£m	3	0.006	6.045	-	**6.051**
9	Total functional expenditure	£m	3	0.064	23.194	-	**23.258**
10	Local authority and Cumulo rates	£m	3	-	0.059	-	**0.059**
11	Total operating expenditure (excluding 3rd party)	£m	3	0.064	23.253	-	**23.317**
12	Depreciation	£m	3	-	0.547	-	**0.547**
13	Total operating costs (excluding 3rd party)	£m	3	**0.064**	**23.800**	**-**	**23.864**

B	Sludge treatment type			Untreated sludge	Raw sludge liming	Conventional AD	Advanced AD	Incineration of raw sludge	Incineration of digested Sludge	Pre-conditioning / composting	Other	Total
14	Power	£m	3	-	0.191	(0.003)	(0.783)	-	-	-	-	**(0.595)**
15	Income treated as negative expenditure	£m	3	-	-	(0.032)	(7.312)	-	-	-	-	**(7.344)**
16	Discharge consents	£m	3	-	-	0.004	0.240	-	-	-	-	**0.244**
17	Bulk supply	£m	3	-	-	-	-	-	-	-	-	**-**
	Other operating expenditure			-	-	-	-	-	-	-	-	**-**
18	- Renewals expensed in year (Infrastructure)	£m	3	-	-	-	-	-	-	-	-	**-**

				Untreated sludge	Raw sludge liming	Conventional AD	Advanced AD	Incineration of raw sludge	Incineration of digested Sludge	Pre-conditioning / composting	Other	Total
19	- Renewals expensed in year (Non-Infrastructure)	£m	3	-	-	-	-	-	-	-	-	**-**
20	Other direct operating expenditure (New cods? Check def'n)	£m	3	-	1.495	0.390	23.883	-	-	-	-	**25.768**
21	Other indirect operating expenditure (new code? Check def'n.)	£m	3	-	0.329	0.101	5.706	-	-	-	-	**6.136**
22	Total functional expenditure	£m	3	-	2.015	0.460	21.734	-	-	-	-	**24.209**
23	Local authority and Cumulo rates	£m	3	-	0.170	0.052	2.914	-	-	-	-	**3.136**
24	Total operating expenditure (excluding 3rd party)	£m	3	-	2.185	0.512	24.648	-	-	-	-	**27.345**
25	Depreciation	£m	3	-	1.126	14.276	20.184	-	-	-	11.466	**47.052**
26	Total operating costs (excluding 3rd party)	£m	3	**-**	**3.311**	**14.788**	**44.832**	**-**	**-**	**-**	**11.466**	**74.397**

C	**Sludge disposal route**			Landfill, raw	Landfill, partly treated	Land restoration / reclamation	Sludge recycled to farmland	Other	Total
27	Power	£m	3	-	-	-	-	-	**-**
28	Income treated as negative expenditure	£m	3	-	-	-	(2.274)	-	**(2.274)**
29	Discharge consents	£m	3	-	-	-	-	-	**-**
30	Bulk supply	£m	3	-	-	-	-	-	**-**
	Other operating expenditure			-	-	-	-	-	**-**
31	- Renewals expensed in year (Infrastructure)	£m	3	-	-	-	-	-	**-**
32	- Renewals expensed in year (Non-Infrastructure)	£m	3	-	-	-	-	-	**-**
33	Other direct operating expenditure (New cods? Check def'n)	£m	3	-	-	-	7.835	-	**7.835**
34	Other indirect operating expenditure (new code? Check def'n.)	£m	3	-	-	-	2.792	-	**2.792**
35	Total functional expenditure	£m	3	-	-	-	8.353	-	**8.353**
36	Local authority and Cumulo rates	£m	3	-	-	-	0.024	-	**0.024**
37	Total operating expenditure (excluding 3rd party)	£m	3	-	-	-	8.377	-	**8.377**
38	Depreciation	£m	3	-	-	-	0.496	-	**0.496**
39	Total operating costs (excluding 3rd party)	£m	3	**-**	**-**	**-**	**8.873**	**-**	**8.873**

Other expenditure - Wholesale wastewater

Line	Item description	Unit	DPs	Network plus sewage collection	Network plus sewage treatment	Sludge	Total
D	**Opex analysis**						
40	Employment costs - directly allocated	£m	3	20.185	24.133	17.767	**62.085**
41	Employment costs - indirectly allocated	£m	3	17.779	21.656	15.414	**54.849**
42	Number FTEs - directly allocated	Nr	0	429	513	378	**1,320**
43	Number FTEs - indirectly allocated	Nr	0	378	460	328	**1,166**
44	Costs asscociated with Traffic Management Act	£m	3	0.190	-	-	**0.190**
45	Costs associated with Industrial Emissions Directive	£m	3	-	-	-	**-**
E	**Service charges**						
46	Canal & River Trust service charges and discharge consents	£m	3	0.140	-	-	**0.140**
47	Environment Agency service charges / discharge consents	£m	3	2.299	6.097	0.244	**8.640**
48	Other service charges / permits	£m	3	-	-	-	**-**

Sludge transport method (4W.1-4W.13)

1 Sludge transport includes all costs associated with the transport of liquid sludge <10% dry solids and the total costs (Total Column) reconciles to the total sludge transport costs shown on table 4E (Sludge Transport column).

2 All sludge is transported via tankers excluding the transportation of sludge from Southend to Rochford which is transported via pipeline. The costs shown under pipeline represent the recorded maintenance costs and an estimated power cost for pumping based on the pump capacity.

3 We have no liquid sludge transported by truck. All transportation of raw cake is recorded under Sludge Treatment (Table B) as it is >10% dry solids.

Sludge Treatment Type (4W.14-4W.26)

Power (sludge treatment) (4W.14)

4 Power costs are captured by our general ledger costing system (SAP) at site level with allocations employed to allocated costs between sewage treatment assets and sludge treatment assets for combined sites. These allocations are based on a combination of site energy monitoring data and historical energy audits. 100 per cent of all CHP generated power is credited to sludge assets regardless if it was consumed by sludge or sewage treatment assets. Power costs exclude power export credits and ROCS credits from CHP energy generation.

5 Sludge treatments assets are predominantly advanced AD sites with only one site (Chelmsford) treating conventional AD and some emergency liming sites at critical periods. Site power costs are allocated to their respective sludge treatment types.

6 The total power costs reconciles to table 4E column sludge treatment Line 4E.1.

Income treated as a negative expenditure (sludge treatment) (4W.15)

7 Costs relate to ROCS and power external export income from CHP energy generation. Credits for power consumed within the business (by sewage treatment assets) are recorded under Line 4W.14 (power). Income predominantly related to Advanced AD treatment with a small amount of income from Chelmsford CHP (conventional AD).

8 The total income reconciles to table 4E sludge treatment column Line 4E.2.

Discharge consents (sludge treatment) (4W.16)

9 EA charges for waste permits are allocated to sites and recorded under discharge consents for sludge treatment sites. These are predominantly related to Advanced AD treatment with a small amount relating to Chelmsford STC (conventional AD).

10 The total reconciles to table 4E sludge treatment column Line 4E.3.

Other direct & indirect operating expenditure (sludge treatment) (4W.20-4W.21)

11 Other direct expenditure is captured on our general ledger costing system (SAP) and recorded to STC sites. Allocations are adopted for non site specific direct expenditure. Indirect expenditure is allocated to sites based on the gross direct expenditure excluding power and income. Site costs are subsequently allocated to treatment types. These are predominantly related to Advanced AD treatment with a small amount relating to Chelmsford STC (conventional AD) and emergency liming sites.

12 The sum of other direct and indirect operating expenditure reconciles to table 4E sludge treatment column Line 4E.7.

Local authority rates (sludge treatment) (4W.23)

13 Rates costs are allocated to sludge assets based on GMEAV values (17/18) and subsequently allocated to sites and treatment types based on gross direct costs excluding Power and Income.

14 The total local authority rates reconciles to table 4E sludge treatment column Line 4E.8.

Total operating expenditure excluding 3rd party (sludge treatment) (4W.24)

15 The total reconciles to table 4E sludge treatment column Line 4E.9.

Sludge disposal route (4W.27-4W.39)

Power (sludge disposal route) (4W.27)

16 We have no power costs relating to sludge disposal activities.

17 The total reconciles to table 4E sludge disposal column Line 4E.1.

Income treated as a negative expenditure (sludge disposal route) (4W.28)

18 Includes all income from farm sales for treated final cake. The income is allocated back to sites based on the recorded haulage volumes of final cake to land. The sites are subsequently allocated and summed by sludge disposal routes from the final sludge treatment sites.

19 The total reconciles to table 4E sludge disposal column Line 4E.2.

Other direct & indirect operating expenditure (sludge disposal route) (4W.33-4W.34)

20 Direct other operating expenditure is captured on our general ledger costing system (SAP) by sites with other direct costs (spreading and farm sales advisers etc) allocated to sites based on farm sales income. Indirect management and support expenditure is allocated to sites based on direct expenditure. The sites are subsequently allocated and summed by sludge disposal routes from the final sludge treatment sites.

21 The total reconciles to table 4E sludge disposal column Lines 4E.7.

Local authority rates (sludge disposal route) (4W.36)

22 Includes a small allocation of business rates for central offices allocated to sludge disposal routes based on direct expenditure.

23 The total reconciles to table 4E sludge disposal column Line 4E.8.

Total operating expenditure excluding 3rd party (sludge disposal route) (4W.14)

24 The total reconciles to table 4E sludge disposal column Line 9.

Historical cost depreciation (4W.12, 4W.25 and 4W.38)

25 The only sludge pipeline asset we hold is the pipeline between Southend and Rochford which was installed pre-privatisation and, as such, is not separately identifiable in our fixed asset register. As it is not possible to reliably separate out and attach a value to this pipeline, and given the immateriality of any values involved, any associated depreciation charge is included in the wastewater network+ depreciation charge reported in table 2D.

26 Any future capital expenditure on sludge pipeline assets will be recorded and reported as such.

27 The sludge depreciation charge for the year is higher than previous years due to the depreciation on assets which have been retained for resilience purposes being accelerated over the remainder of AMP 6 as these assets will no longer form part of the sludge treatment strategy from 1 April 2020. The resilience assets depreciation increase was effective from 1 October 2017 resulting in a higher charge for the second half of 2018 and the whole of 2019 and 2020.

28 The total depreciation charge for sludge treatment and disposal assets for each year has been shared across the column headings based on the principal sludge treatment technology in use at each sludge treatment centre (STC) in each year and 2018-19 depreciation charges applicable to each STC. Raw sludge liming, Conventional AD and Other are higher than 2017-18 due to a full year of accelerated depreciation on resilience assets. Other depreciation is mainly depreciation on resilience assets.

29 All sludge cake is disposed on farmland.

Other expenditure

Employment costs and FTEs - directly allocated (4W.17 and 4W.19)

30 Although some direct operating employment costs can be allocated to service, many front line employees work across operational boundaries and therefore, where not directly allocated, we have used a management assessment of time spent by service. We have nevertheless classed all employees within this category as direct.

31 The number of direct FTEs is assessed from the total employment costs using an average cost per employee.

Employment costs and FTEs - indirectly allocated (4W.18 and 4W.20)

32 Indirectly attributed employment costs are made up of indirect operational employees, employees engaged on capital schemes and general and support employees.

33 General and support employment costs are allocated by an appropriate cost driver as part of our regulatory accounts process.

34 Indirect operational employment costs and employment costs in relation to capex activity are allocated as a proportion of direct employment costs.

35 The number of indirect FTEs is assessed from the total employment costs using an average cost per employee.

Costs associated with Traffic Management Act (TMA) (4W.44)

36 Reported costs reflect TMA costs principally charged to sewerage , including permits and administration costs but excluding and fixed penalty notices and fines.

Costs associated with Industrial Emissions Directive (4W.45)

37 We have no costs relating to the Industrial Emissions Directive.

Canal & River Trust service charges and discharge consents (4W.46)

38 We have included here payments we make to British Waterways.

Environment agency service charges/discharge consents (4W.47)

39 We have included here payments to the Environment Agency for discharge consents for Water Recycling Centres and pumping stations and waste permits for sludge treatment.

40 In April 2018 the Environment Agency introduced a new charging scheme. The service charges therefore have increased noticeably from the values reported last year.

Other discharge charges/permits (4W.25)

41 We have no other discharge charges/permits.

42 The totals of lines 4W.46-4W.48 reconciles to table 4E Line 4E.3 (discharge consents).

Notes to the Annual Performance Report

The following notes set out additional policies and disclosures required by the Regulatory Accounting Guidelines (RAGs) which have not already been covered by the preceding tables and associated commentaries.

(1) General

The Company's activities are regulated by the conditions of a Licence granted to the Company by the Secretary of State for the Environment. With certain exceptions, the regulatory provisions do not apply to business activities which are not connected with the carrying out of the water and sewerage function; these business activities are referred to as non-appointed business (see note 3).

Under the RAGs the classification of certain balances within the regulatory accounts differs from that disclosed in the statutory financial statements. A reconciliation of the differences is provided in Tables 1A to 1D.

The narrative disclosures required by RAG 3.11, section 4 are provided with the relevant tables, with the exception of the tax reconciliations which are provided in note 8.

(2) Accounting policies

(a) Revenue recognition

The following detailed policy on revenue recognition supplements the turnover accounting policy within the statutory financial statements.

i. Occupied properties are chargeable for water and sewerage, and revenue is recognised based on services supplied. The identity of the occupier is ascertained by either contact initiated from the occupier, completion of a questionnaire sent out by the Company to the premises, a visit by a customer services representative or searches of publicly available property data. Unoccupied and unfurnished properties are vacant properties and deemed void, and therefore no billing is raised and no turnover recognised. The status of a property as vacant/void is confirmed by reading of the meter to ascertain changes in consumption, or in relation to unmeasured properties through providing a questionnaire for completion and return by any occupier, plus an inspection where considered necessary.

ii. Household and non-household charges apply to unoccupied premises in certain circumstances as set out in our Legal Charges Scheme, and revenue is recognised on these properties consistent with occupied properties. Unoccupied premises which attract charges include:

- premises which are left unoccupied for periods of time but are left with bedding, a desk or other furniture so that they may be used as a dwelling or as office or commercial premises.
- premises where renovation or building work is being undertaken.
- premises which are not normally regarded as being occupied such as cattle troughs and car parks.
- all metered premises (furnished and unfurnished) where water is being consumed.

Further, the following provisions are applied in respect of disconnections:

- Premises listed in Schedule 4A of the Water Industry Act 1991 (e.g. any dwelling occupied by a person as his or her only or principal home) cannot be disconnected for non-payment of charges.

- If the water supply to any premises is disconnected for any reason but we continue to provide sewerage services to those premises, the customer will be charged the appropriate sewerage unmeasured tariff unless it can be demonstrated that the premises will be unoccupied for the period that the premises are disconnected, in which case there is no charge. Revenue is recognised for sewerage services up to the point we are aware the property becomes unoccupied.

- If it is subsequently found that the premises were occupied for any period when we were advised that the premises would be unoccupied, we will apply the appropriate sewerage unmeasured tariff to that period, raise appropriate retrospective bills and recognise revenue at that point.

- In the event that we suspect that a property is occupied but we have no record of the occupier, we take steps to establish the identity of the occupier in order that billing can commence and revenue be recognised. 'Occupier' is defined to include any person who owns premises as set out in part (i) above, and also any person who has agreed with us to pay water supply and/or sewerage charges in respect of any premises (e.g. a Bulk Meter Agreement).

iii. Charges on income relating to debt recovery costs, which are chargeable to customers, are credited to operating costs and charged to the relevant customer account. Turnover is unaffected by these debt recovery costs. Historically, we have only sought to recover court and solicitors' fees where we have issued a court summons. From 2009/10 the Legal Charges Scheme was amended to allow debt recovery agency fees to be recharged to customers.

iv. As soon as new properties are occupied and furnished or consumption is recorded, liability for water and sewerage charges commences, and revenue starts to accrue.

(b) Bad debt

The underlying customer bad debt provision is calculated based on applying expected recovery rates, using actual historical cash collection performance, for an aged debt profile. Our approach to providing for bad debt has not changed, the methodology being consistent with the expected credit loss impairment approach set out in IFRS 9 'Financial Instruments'.

Debt is written off when it falls into one of the following categories.

- The debt is the subject of insolvency proceedings and a claim has been submitted.

- The customer has absconded and subsequent trace activities have proven unsuccessful.

- County Court proceedings and attempts to recover the debt by a collection agency have been unsuccessful.

- The age and value of debt make it uneconomic to pursue.

The debt written off in the current year was £16.2 million (2018: £27.4 million). The reason for the reduction is that less debt met the write off criteria and more options are available to collect the debt. There have been no changes to our debt write-off policy during the year.

(c) Capitalisation policy

The capitalisation policy applied to the APR is consistent with that used in the statutory accounts (accounting policy 1(k) of the Annual Integrated Report), with the exception of the capitalisation of interest. This has been excluded from the APR as per the guidance in RAG 1.08, section 1.6.

(3) Information relating to allocations and apportionments between the appointed and any other business or activity of the appointee or associated company

Non-appointed business activities include legal searches to locate utility infrastructure, domestic emergency and personal accident insurance cover, recreation services, leisure services and the provision of consultancy services. The North Tees water supply agreement to the Huntsman Petrochemical site, which is not in the Anglian Water area, has also been treated as non-appointed business.

Approximately 95 per cent of the operating costs relating to these activities is directly incurred and does not require allocation. Other relevant costs have been allocated according to time spent on these activities, volume of water supplied to customers, or in proportion to direct costs.

We also charge costs to other parts of the organisation that sit outside the regulated business. In these cases, the guidance provided by RAG5 is followed, with costs charged on an arms-length basis, either as a cost pass through or via an hourly rate.

(4) Price control segments

In order to produce the APR and in addition to the accounting structure used for internal management reporting, we have created a separate regulatory cost structure in our financial system. This means that operating costs relating to water, wastewater and household retail price controls can largely be directly assigned. Where costs are not directly allocated to a specific price control, management has assessed an appropriate allocation in accordance with the regulatory accounting guidelines.

Capital expenditure is also largely directly attributable to price control. Where this is not possible, capital expenditure is assigned to the business unit of principal use with an appropriate recharge of depreciation charges for these shared assets made between price control segments in table 2A.

All cost allocations have been carried out in line with the guidance in RAG 2.07, with no material impact on the allocation of costs between price controls when compared to the previous year. More detail on our cost allocation processes can be found in our accounting methodology statement on our company website: www.anglianwater.co.uk

(5) Link between Directors' pay and standards of performance

Directors' pay comprises a package of base salary together with an annual performance-related bonus and eligibility for an award under a long-term incentive plan which is also Company performance related. Directors' bonuses paid by the Company are linked to the standards of performance of the Company and, therefore, in accordance with RAG 3.11. Details of Directors' pay can be found in the Remuneration Report within the Annual Integrated Report.

(6) Measured income accrual

In accordance with RAG 3.11 we highlight the following comments in respect of turnover for the year:

Appointed turnover for the year ended 31 March 2018 included a measured income accrual of £262.7 million (year ended 31 March 2017: £243.4 million). The value of billing recognised in the year ended 31 March 2019 for the prior year was £270.0 million. This has resulted in the recognition in the current year's turnover of an estimation difference for the prior

year of £7.3 million (2018: £10.0 million), representing 0.8 per cent of current year measured turnover (2018: 1.1 per cent) and within acceptable tolerances for accounting estimates.

There have been no changes to the methodology used in calculating the measured income accrual from the prior year.

(7) Information in respect of transactions with any other business or activity of the appointee or any associated company

To the best of the Directors' knowledge, all appropriate transactions with associated companies have been disclosed in notes (a) to (j) below.

(a) Receivables

Receivables totalling £0.3 million were outstanding from other Group companies at 31 March 2019 (2018: £0.5 million).

(b) Payables

An amount payable of £46.6 million was owed to Anglian Water Services Financing Plc at 31 March 2019 (2018: £46.3 million).

(c) Borrowings

Sums borrowed, including accrued indexation by the appointee from Anglian Water Services Financing Plc at 31 March 2019, are set out in full in our Annual Integrated Report, note 20, which can be found on the AWS website - https://www.anglianwater.co.uk/siteassets/household/about-us/aws-air2019.pdf

(d) Dividend policy

On 15 March 2018, Anglian Water announced its plans to reduce dividends to its ultimate shareholders and borrowings through to 2025, resulting in a reduction in the Company's level of debt and gearing, while continuing to meet its investment commitments. Gearing is targeted to reduce to less than 80 per cent by 2020, with further reductions in AMP7.

The Company's dividend policy is to identify the cash available for distribution, allowing for the business' liquidity requirements in respect of funding its operations, the capital programme and servicing its debt for the remainder of the current regulatory period. The dividend policy is also based on ensuring that there is adequate headroom in relation to all of its financial covenants. In assessing the dividend payment, the Directors review the business performance forecasts (currently to the end of the Asset Management Plan (AMP) period 31 March 2020) and give consideration to the potential impact of external factors in the economy and regulatory environment on the Company's forecast cash flows. The Directors consider this cash-based approach provides an acceptable return to the equity investors while ensuring the liquidity requirements of the business are fully met. The overall amount of the Company's ordinary dividends will not exceed the free cash flow (defined as operating cash flow less interest and capital maintenance payments) generated by Anglian Water Services Limited and in practice will be limited by its financial covenants. Special dividends may also be paid in addition to ordinary dividends, but these are also limited by financial covenant constraint. The Company's business plan for AMP6 is to target gearing below 80 per cent by 2020. This policy is consistent with Condition F of the Licence. Notwithstanding dividend capacity available under this policy, as noted above, the Company plans to significantly reduce dividends to the ultimate shareholders, invest more in resilience and reduce borrowing through to 2025.

A dividend, available to investors in the ultimate parent company, of £61.5 million was paid for the year ended 31 March 2019 (2018: £79.3 million) in respect of the appointed business.

Following the settlement of the an inter-company loan of £1,602.6 million between Anglian Water Services Holdings Limited and Anglian Water Services Limited in March 2018, the related 'round trip' inter-company interest and dividend payments reported in previous years have ceased.

In October 2018 the Group made an equity injection of £22.0 million into AWS as part of its stated plan to further reduce the level of gearing.

(e) Guarantees/securities

The Company, as part of the Anglian Water Services Financing Group, guarantees unconditionally and irrevocably all the borrowings and derivatives of Anglian Water Services Financing Plc, which at 31 March 2019 amounted to £7,921.6 million (2018: £7,321.8 million). The borrowings of Anglian Water Services Holdings Limited and Anglian Water Services Overseas Holdings Limited are also guaranteed unconditionally and irrevocably by the Company. Anglian Water Services Holdings Limited and Anglian Water Services Overseas Holdings Limited had no outstanding indebtedness at 31 March 2019.

(f) Supply of services

In order to achieve economies of scale across the Anglian Water Group, some services are provided to associated companies by the appointed business. We ensure that the cost of any services provided to associated businesses are fully recovered including an element of overhead costs. There has been a slight increase in recharges from the prior year as we have moved a number of employees back into the regulated business who spend a small amount of their time on the non-regulated business activities.

Recharges by the appointee to associated companies during 2018-19:

Nature of transaction	Company	Turnover of Associate £m	Terms of supply	Value £m
HR, Payroll, OHS, Regulation	AWG Group Limited	-	Actual Costs	0.266
Asset Management	AWG Group Limited	-	Actual Costs	0.163
Corporate Affairs	AWG Group Limited	-	Actual Costs	0.086
Finance	AWG Group Limited	-	Actual Costs	0.145
Infomation Services	AWG Group Limited	-	Actual Costs	0.290
Accommodation	AWG Group Limited	-	Actual Costs	0.307
Laboratory charges	Alpheus Environmental Limited	7.724	Actual Costs	0.072
Land rental	Alpheus Environmental Limited	7.724	Actual Costs	0.169
Vehicles	AWG Group Limited and Alpheus Environmental Limited	-	Actual Costs	0.065
Costs incurred on behalf of Tide	Tide (formerly Geodesys)	6.626	Actual Costs	0.667
				2.229
Corporation tax group relief surrendered by the regulated business	-	-	-	Nil

We have transferred approximately 55 employees back to the regulated business during the year to reflect where the vast majority of their time is spent. As a result, costs that were charged to the appointed business in 2017-18 are now incurred directly by the appointed business with a recharge being made to non appointed associates as required (see above).

Recharges by associated companies to the appointee during 2018-19:

Nature of transaction	Company	Turnover of associated company £m	Terms of Supply	Value £m
Directors' costs	AWG Group Limited	-	Time apportionment	0.190
CEO costs	AWG Group Limited	-	Time apportionment	1.472
Finance Director Services	AWG Group Limited	-	Time apportionment	0.689
Treasury Services	AWG Group Limited	-	Time apportionment	0.888
Information Services	AWG Group Limited	-	Time apportionment	0.281
Corporate Affairs	AWG Group Limited	-	Time apportionment	0.423
Legal Services	AWG Group Limited	-	Time apportionment	0.295
Health and safety	AWG Group Limited	-	Time apportionment	0.072
Human Resources	AWG Group Limited	-	Time apportionment	0.251
Property Services	AWG Group Limited	-	Time apportionment	0.046
Business Change	AWG Group Limited	-	Time apportionment	0.353
Internal Audit	AWG Group Limited	-	Tendered	0.428
External Audit	AWG Group Limited	-	Tendered	0.225
Insurance Administration	AWG Group Limited	-	Time apportionment	0.725
Income Protection Costs	AWG Group Limited	-	Time apportionment	0.333
Taxation Services	AWG Group Limited	-	Time apportionment	0.279
Pension Admin, Advice and Audit	AWG Group Limited	-	Pass through	0.606
Miscellaneous Items	AWG Group Limited	-	Pass through	0.098
Office Accommodation Lancaster House	Ambury Developments Limited	0.597	Actual costs	0.447
Bulk Purchase of Water	Ardleigh Reservoir Commitee	1.442	Actual costs	0.909
				9.010
Corporation tax group relief received by regulated business	Osprey Holdco Limited	-	(Note 1)	1.666
Corporation tax group relief received by regulated business	AWG Parent Co Limited	-	(Note 1)	16.334
Corporation tax group relief received by regulated business	Osprey Acquisitions Limited	-	(Note 1)	3.000

(Note 1) The losses from Osprey Holdco Ltd, AWG Parent Co Ltd and Osprey Acquisitions Ltd are provided for at a rate of 19%. However, there is an agreement that AWS will not have to pay for these losses until it receives the benefit of the capital allowances that were disclaimed in order to generate the taxable profits against which the surrendered losses could be utilised.

Services provided by the non-appointed business:

Service provided by the non-appointed business	Basis of recharge made by the appointed business	Value of the recharge made by the appointed business £m
Treatment of imported sludge	During 2018/19 we treated sludge from Yorkshire Water for part on the year on a short-term contract and charged on a marginal cost basis to cover the incremental costs of transport and treatment. In line with RAG5 guidance, the recharge therefore excluded capital costs/depreciation and any financing charges . An small administration overhead was included.	0.111
Treatment of tankered waste	Recharge to non-appointed is based on full cost including fixed and variable cost and depreciation and financing.	2.173
Others	Key activities include mapping and data services, recreation facilities and wind turbines. The recharges made to the non-appointed business have been derived on a bottom-up bases to include recovery of fixed and variable costs along with an appropriate share of depreciation and financing costs. A positive margin is made on this activity. Approximately £0.8 million of the reported costs are in relation to depreciation and financing recharges.	10.785
Total non-appointed operating costs		**13.069**

(g) Omissions of rights

No material omissions took place during the year.

(h) Waivers

There were no material waivers during the year.

(i) Compliance with Condition K

The Company has been compliant with Condition K3.1 of the Licence throughout the year.

(8) Current tax reconciliations

A reconciliation of the appointed corporation tax charge reported in Table 1A to that resulting from applying the standard rate of tax to the profit on ordinary activities before tax as shown in Table 1A is set out below.

	Notes	£m
Profit before tax per the Annual Performance Report		**(55.8)**
Corporation tax charged at 19%		**(10.6)**
Depreciation and amortisation		**49.5**
Capital allowances	**(i)**	**(34.5)**
Items not taxable	**(ii)**	**(0.2)**
Items not deductible for tax purposes	**(iii)**	**2.3**
Short-term timing differences		**(10.4)**
Fair value losses on financial instruments (not deductible)		**18.7**
Group relief utilised	**(iv)**	**37.6**
Adjustments in respect of previous years	**(v)**	**2.0**
Current tax charge for the year		**54.4**

The table below sets out the reconciliation between the UK corporation tax charge reported in Table 1A to the total current tax charge allowed in price limits.

	Notes	£m
Tax charge allowed in price limits at 20% and in 2012/13 prices		**8.2**
Tax effect at 20% of and in 2012/13 prices:		
Increase in profits before tax		**(0.8)**
Reduction in disallowable depreciation and amortisation		**(3)**
Reduction in capital allowances	**(i)**	**10.9**
Reduction in pension deductions		**1.1**
Transitional charge in adoption of IFRS15	**(iv)**	**34.1**
Other		**(4.4)**
Current tax charge before adjustments for previous years at 20%		**47.7**
Effect of the reduction in corporation tax rate to 19%	**(vi)**	**1.7**
Adjustments for previous years	**(v)**	**(2.4)**
Current tax charge in APR at 2012/13 prices		**47.0**
Indexation up to outturn prices		**7.4**
Current tax charge in APR		**54.4**

Notes

i. The reduction in capital allowances reflects our current programme of disclaiming all capital allowances in order to utilise Surplus ACT held on the balance sheet. The Surplus ACT was fully utilised by March 2019, subject to HMRC agreement.

ii. The items not taxable are profits arising on the sale of land.

iii. Items not deductible for tax purposes mainly consist of depreciation on assets not eligible for capital allowances and compliance fines.

iv. The company adopted IFRS 15 "Revenue from contracts with customers" during the year. As a result, grants and contributions that were previously expected to be taxed over the life of the assets to which they relate, became taxable immediately.

v. The adjustment for previous years reflects an over-prudent view taken in previous years.

vi. The main rate of corporation tax reduced from 20 per cent to 19 per cent on 1 April 2017. As the corporation tax in the price limits was calculated at a rate of 20 per cent there will be a reconciling item in each of the remaining years of the AMP. The corporation tax rate will reduce further to 17 per cent on 1 April 2020.

Tax and transparency

We have prepared a statement on tax and transparency which can be found on our website at www.anglianwater.co.uk and is also included within the "an open and constructive approach" section of our Annual Integrated Report.

Data Assurance Summary

Introduction

1 We understand that customers and other stakeholders want information about our performance and that the information needs to be accessible and understandable. We are committed to providing information that is reliable and can be trusted.

2 Our overall approach to assurance is set out in *Our Assurance Framework* which can be viewed on the Anglian Water website. This submission has been completed within that framework.

3 In March 2019 we published our Final Assurance Plan (*Performance Reporting 2018/19*) after consulting with stakeholders on our draft plan. This document outlined the approach that we intended to take to provide assurance for our 2018/19 performance information. In the plan we set out our assessment of the risks to data quality for the non-financial data of the Annual Performance Report (APR), which is our main performance report of the year. We also set out the controls we intended to apply to our APR financial data.

4 Also in the scope of our Final Assurance Plan were our Charges Scheme ,Water Resources Market Information and Bioresources Market Information.

5 In this Data Assurance Summary we confirm the actions we have taken to provide assurance to stakeholders over our reported information.

General assurance processes

6 We have an enterprise-wide Business Management System (BMS) that is certified to the ISO 9001 quality management systems standard, whose scope includes the processes for ensuring the collection and storage of reliable performance data. We have established processes and procedures that we adopt when compiling performance data for publication into the public domain:

- Roles and responsibilities are established, including the allocation of named data providers for each line of data
- Methodologies for compiling data are documented in procedures if necessary
- Draft data and commentaries are reviewed by individuals (including senior managers), who are independent of the processes being reviewed
- Final data and commentaries are signed off by the relevant individuals assigned by the risk assessment rating assigned to each individual line
- Data may be subject to review by our third party assurance provider, Halcrow, or our independent financial auditors, Deloitte. Our use of third parties as part of the assurance process is informed by our assessment of risks to data quality.

Our response to feedback on our 2017/18 performance reporting

7 Our *Outcomes Reporting Policy* includes commitments to invite feedback and questions from stakeholders about our reporting policy and performance, to seek to respond positively to feedback and to explain our response.

8 In the Company Monitoring Framework Report for Anglian Water, Ofwat gave the following feedback on our 2017/18 performance reporting. We have indicated how we have responded to each point:

Financial monitoring framework

9 Ofwat said: Our review identified a range of issues including basic data errors, inconsistencies between APR and the data capture submission and clarification of the impact of existing non-household retail market on the calculation of return on regulated equity.

10 Our response:

- We have enhanced the data integrity checks by using a new analytical tool this year, and ensured the data capture submission is the same as the APR in all cases. In the previous year we had modified certain metrics in table 4H to show the underlying performance by excluding inter-company interest and dividends - this is not required any longer as the inter-company loan which gave rise to these items was settled in March 2018. Finally, the return on regulated equity has been calculated on a basis consistent with regulatory guidance.

Charges engagement

11 Ofwat said: Anglian Water's assurance statement was clear and informative. We were impressed with Anglian Water's handling strategies, on which it had consulted with the Consumer Council for Water. The company showed that it has consulted with stakeholders when creating its new connection charging arrangements.

12 Our response:

- We are grateful for this feedback and will continue with this approach.

Outcomes

13 Ofwat said: We have a minor concern that the Annual Integrated Report (AIR) does not clearly explain the outperformance payments for the current reporting year, either in the commentary or in the summary of table 3A. The information is contained within the APR but we consider the absence from the main AIR could lead to a reduction in confidence.

14 Our response:

- Given the broadened scope of the APR, we decided to publish this as a separate document from 2017/18. For 2018/19 we have inserted a link in the AIR report to the APR and placed the reports next to each other on the company website to make sure the information is easily accessible.

- The AIR report for 2018/19 includes a table explaining our ODI (Outcome Delivery Incentives) rewards.

15 Ofwat said: On the company's website, the AIR and APR contain well-presented, clear and customer-focused performance information.

16 Our response:

- We are grateful for this feedback. Furthermore we have sought to ensure that this remains the same as we built our new company website.

Water resources management plan (WRMP) and market information

17 Ofwat said: We have minor concerns in this area, principally due to inconsistencies between the narrative, planning tables and technical reports in the draft water resources management plan. We also consider that the company should provide greater clarity on the assurance process followed and Board involvement for the final plan.

18 Our response:

- These issues have already been addressed as the assessment looked at the draft WRMP. Our revised WRMP and statement of response addressed the concerns raised by Ofwat.

Long-term Viability Statement

19 Ofwat said: Anglian Water has met our expectations with respect to the long-term viability statement. An area where improvement could be made is outlining the impact of stress scenarios modeled on overall performance of the company, the ability of the company to service its debt and on its credit rating, as set out in the information notice IN18/04.

20 Our response:

- We have added additional narrative to the long term viability statement which addresses Ofwat's points.

Financial Flows

21 Ofwat said: The company exceeded our expectations in this areas as it published all the data tables within its APR with detailed accompanying narrative and its data was assured by its external auditors.

22 Our response:

- We are grateful for this feedback and will continue to adopt this approach when reporting our Financial Flows.

Risk & compliance statement

23 Ofwat said: The Board has provided a clear statement confirming that the company has an understanding of, and is meeting, its obligations. The statement has been appropriately signed off on behalf of the board.

24 Our response:

- We are grateful for this feedback which has informed our statement and sign-off for this year.

Assurance plan

25 Ofwat was satisfied with our approach in this area and did not highlight any areas of concern.

Cost assessment

26 Ofwat said: All the cost assessment tables were complete with no missing data. However we had to raise several queries to seek explanation for mostly minor data variances where the commentary did not provide a sufficient explanation.

27 Our response:

- We have built an analytical tool with an aim to eliminate minor errors and highlight data variances from previous years. Any variances that are highlighted will be explained further in the commentary.

Casework

28 Ofwat was satisfied with the our approach and responses in this area.

PR19 Initial assessment of business plans - data consistency

29 Ofwat said: We found minor issues overall with the consistency of performance and financial data reported in the company's business plan tables with previous data submissions.

30 Our response:

- We have taken this feedback and made sure to take steps to improve data consistency for 2018/19 reporting. We have also used our new data analytical tool to highlight data inconsistencies.

PR19 Initial assessment of business plans - data quality

31 Ofwat was satisfied with our approach in this area.

Wider assurance and information

32 Ofwat had no issues in the assessment of the company in relation to wider assurance.

Specific assurance processes for 2018/19 performance information

Annual Performance Report (APR) Non-financial data

33 As proposed in our Final Assurance Plan we have carried out the assurance activities in two stages: Stage 1 'in-year' assurance reviews and Stage 2 'year-end' assurance reviews.

34 The assurance reviews were prioritised based on the results of the risk assessment that we carried out. We documented the results of this assessment, in *Performance Reporting 2018/19*. This document includes also our assessment of the strengths and weaknesses of our assurance framework and analysis of stakeholders' information needs relating to reporting of performance.

Stage 1 'in-year' assurance reviews

35 For this stage of the assurance programme we selected for review a number of APR data lines that were rated as higher risk in our risk assessment process. These reviews were all conducted by Halcrow and employees of Anglian Water (who are independent of the processes being reviewed) The terms of reference of these reviews were to:

- Confirm whether the identified risks to data quality appear to be reasonable and that the controls, if implemented, should mitigate them
- Examine in detail the risk assessments, including how controls are implemented and checked
- Validate calculations carried out by the company to provide information related to data which are publicly available via a regulator
- Identify areas for improvement
- Verification to check the completion of actions resulting from previous audits
- Discuss and test whether changes to the reporting guidelines will impact on year-end reporting.

36 In addition, our Internal Audit provider, Pricewaterhouse Coopers, carried out reviews of ODI during the course of the report year, these reviews looked at:

- Interruptions to supply
- Leakage
- SIM
- Per property comumpsion (PPC)

37 These four ODI reviews targeted the highest risk areas and focused on the overall governance arrangements for the ODIs and the controls applied to ensure the completeness, accuracy and validity of associated data.

Stage 2 'year-end' assurance reviews

38 This stage of the assurance programme focussed on the data we intended to report against our 32 Outcome Delivery Incentives (ODIs). These reviews were all conducted by Halcrow. The terms of reference of these reviews were to:

- Review the company's methodologies and procedures for identifying, analysing and recording data and, on a sample basis, test the application of those methodologies and procedures.
- Provide an opinion on the adequacy of the methodologies and procedures adopted by the company to provide reliable information.
- Alert the company to any material areas of concern or weakness observed.
- Review progress against issues raised in the last audit.
- Review whether the APR procedures and any associated local procedures / work instructions are current, accurate and appropriate.
- Check that data stated in the tables is supported by audit trails which are reliable, accurate and complete.
- Check that suitable commentary is provided which explains performance.
- Confirm that changes from previous submissions have been adequately explained.
- Seek understanding of the upstream processes which generate data and the controls in place for ensuring the reliability of those data. Test where possible.

39 The reviews were carried out in April, May and June 2019. The results of each review were documented in summary audit reports, including information about the tests applied and the results, along with details of recommendations for longer term improvements. Any outstanding data issues were addressed prior to finalising the data.

40 A summary of the findings of Halcrows' review is set out in their Technical Assurance Executive Summary which is reproduced in our APR.

41 A summary of all the in-year and year-end assurance reviews and their key findings is listed in the Appendix.

Director sign-off

42 As set out in *Performance Reporting 2018/19*, the sign-off protocols which form part of our assurance process are based on our data quality risk assessment. All APR data lines are approved by the nominated 'line approver', who is a different individual from the one who provided the data. Further sign-off is required for higher risk data lines: by the Head of Business Unit (for lines rated as Medium risk) or Management Board Director (where the rating is High or Critical). These protocols were all applied to the APR.

43 Drafts of the APR were provided to the AWS Board on 23 May 2019, when the Risk and Compliance Statement and Annual Integrated Report were reviewed. At this meeting the Board delegated authority to certain directors to approve the final versions. Final drafts of the APR were approved by the company's Executive Directors on 8 July.

APR Financial data

44 Our Regulatory Accounts have been prepared in accordance with the Regulatory Accounting Guidelines issued by Ofwat. In accordance with our plan, they were subject to review by the company's independent financial auditors, Deloitte, to ensure compliance with Condition F of the Instrument of Appointment as a water and sewerage undertaker under the Water Industry Act 1991.

45 The review took the following form:

- Audit of APR Tables 1A-1E and 2A-2K and the related notes and commentaries. Deloitte's audit was conducted in accordance with International Standards on Auditing (UK) issued by the Financial Reporting Council, and included such tests of transactions and of the existence, ownership and valuation of assets and liabilities as they considered necessary. Deloitte planned and performed their audit to be able to provide reasonable assurance that the regulatory accounting statements are free from material misstatement and are properly prepared in accordance with Regulatory Licence Condition F.

- In the previous year, we asked Deloitte to perform 'agreed upon procedures' (AUP) on 1F and certain tables in section 4. In order to provide more robust assurance this year Deloitte conducted audits on the financial data in tables 4D, 4E, 4F, 4H (excluding RORE), 4I, 4J and 4K.

- Ofwat requested that Table 1F should be audited but it was subsequently agreed between Ofwat and Deloitte that the audit requirement would be replaced with AUP.

46 Our auditor have provided its audit opinion that our Regulatory Accounting Statements have been prepared in all material respects, in accordance with Condition F, the Regulatory Accounting Guidelines as issued by Ofwat, and the accounting policies. The full audit opinion is included in our APR.

47 The first line of defence against data error lies in the processes that we follow to prepare our regulatory accounts tables. The following table reports the risks we have identified around our processes that could, without controls, result in mis-statement in our APR. It also shows the controls we have implemented for 2018/19 reporting.

Issue	Risk	Controls applied for 2018/19
Spreadsheet based consolidation process	Errors may arise from input errors, formula errors and maintaining version control	• Additional validation tests built into APR spreadsheets • Collective reviews of all tables held with table and line owners and Financial Control teams
Internal process has no direct link to Ofwat tables	Ofwat tables and company spreadsheets are both standalone with the risk that data may be copied incorrectly	• Detailed review at line item detail and sign off with table/line owners to ensure consistency between spreadsheets and Ofwat return
Comprehensive audit trail required for manual adjustments	Post close adjustments and other adjustments to reported figures have the potential to be done in isolation with the result that the impact may not be correctly reflected in other areas of the return	• Spreadsheet tracker of changes made to APR table to be kept for all changes following specified cut-off date. • Password protection in place on master APR table to ensure all changes are made via Financial Controls team after specified cut-off date • Defined version control for all key APR tables
Shared spreadsheets	Risk of data corruption and/or data loss due to more fragile nature of shared files	• Back up of spreadsheets taken on a daily basis at key times during the APR process

Issue	Risk	Controls applied for 2018/19
Continuity of Personnel	Some knowledge centered around a few key individuals with the risk that unplanned absence will lead to lower knowledge base and more risk of error	• Detailed procedure notes updated for all APR tables
Security of access to data and tables	The need to strike a balance between access for all key individuals whilst maintaining security of data and the likelihood of unauthorised changes	• Password protection and restricted access in place for key APR spreadsheets
Robust change management process	The need to ensure that all changes are logged with version control fully functional and a detailed reconciliation between versions	• Password protection in place on master APR table and commentaries to ensure all changes are made via Financial Controls team after specified cut-off date • Defined version control for all key APR tables
Potential uncertainty or ambiguity in Ofwat APR guidance	Potential ambiguity around some of the Ofwat guidance leading to inconsistencies in the way in which the RAGs are applied, both internally and between other companies.	• Comprehensive commentaries on all the APR tables have been included again this year. By setting out our key assumptions and year-on-year variances, we expect stakeholders will gain a better understanding of our financial and operational performance. There is also an improvement in internal control that comes from the review and explanation of variances
Consistency between submitted tables and APR	Risk that due to manual completion processes, final tables may not be 100 per cent consistent	• Full consistency checks between statutory accounts and APR tables prior to final sign-off of APR, followed by subsequent lock-down of APR table master spreadsheets
Intra-table consistency	Potential lack of consistency between tables showing different versions of the "same" number (e.g. Total operating costs may be shown including or excluding depreciation).	• Separate, off-line tables to reconcile different versions of APR tables that show the 'same thing'
Significant year-on-year variances not identified	Variances which require an explanation in the commentary may be overlooked, giving rise to Ofwat queries	• Data analytics tool developed with our data science team to help identify variances requiring an explanation

Charges Scheme

48 In accordance with our assurance plan, we invited Deloitte to perform agreed upon procedures relating to charges for 2019/20 for Wholesale and Household Retail customers, to assist the Directors of the Company in determining the accuracy of proposed charges in recovering allowed revenue.

49 Deloitte issued its report on 20 December 2018. All procedures were completed with no exceptions noted.

Water Resources Market Information

50 We included the Water Resources Market Information in the scope of Performance Reporting 2018/19. We set out the assurance activities we intended to carry out, linked to the risk of data inaccuracy.

51 Our plan is to update our Water Resources Market Information after Autumn 2019, following publication of our final 2019 Water Resources Management Plan. There is therefore nothing to report in this Data Assurance Summary. We will publish an assurance statement alongside our Water Resources Market Information in due course.

Bio-resources Market Information

52 We have published on our website tables about our bioresources assets and activities and submitted to Ofwat a report on sludge trading activity. We invited our external assurance provider, Halcrow, to provide assurance over these tables. We have published their Technical Assurance Summary alongside the tables on our website.

Feedback

53 We welcome feedback from stakeholders on all aspects of our performance reporting. You can contact us in any of the following ways:

- email: Stakeholderfeedback@anglianwater.co.uk
- call: 03457 91 91 55

54 We undertake to share the feedback we receive and explain how we have responded to it.

Appendix: Summary of assurance reviews carried out in 2018/19

The tables below shows the assurance activities carried out during 2018/19, firstly 'in-year' then at 'year-end'.

In-year audit programme

Topic	Auditor	Material findings
Interruption to supply	PwC	This area was subject to an Internal Audit review in March. Following the review we are working to develop the Operation Log (the system used to record interruptions) as well as review the training provided to Network Technicians for use of the log.
Leakage	PwC	This area was subject to an Internal Audit review in March. Following the review we are working to improve the estimates for certain water balance components with the new shadow requirements in the build up to AMP7. Following the review additional funding has been requested to repair/replace the Distribution Zone night flow meters, an investigation is being carried out to investigate what is blocking the repair of long standing faults on pressure loggers and updates are being carried out for Distribution Input meters.
SIM	PwC	This area was subject to an Internal Audit review in March. Following the review we are have corrected the error noted on written complaint classification and shared best practice learning with the agents. We will continue to perform random selection testing of written complaint and unwanted calls recording but will also include duplicate references in test samples, we will update training materials and consider recommendations made to monitor and report error rates for written complaint classification. Following the review the issue regarding recording of customer calls has been resolved.
Per Property consumption	PwC	This area was subject to an Internal Audit review in March. Following the review we will correct minor excel formulae errors, updating the thresholds in iREM (which generates automated alerts where abstraction rises beyond permitted limits) and consider additional controls for the non-household consumption mechanism.
Burst Mains	Halcrow	There is no specific guidance for data gathering; a formal methodology should be prepared. The procedure documents should include a description of how the Hartlepool data is prepared.
Water Properties Billed	Halcrow	Minor amendments needed to procedures.
Serviceability	Halcrow	No material concerns.
Sewer Activity	Halcrow	Limitations for data entry mean it is now always possible to identify a collapse as 3rd party or non-reportable. A workaround for this issue has been implemented, for AMP7 a new system could be implemented.
Security of Supply	Halcrow	No material issues.
Population	Halcrow	No material issues.
Sewage Treatment Works	Halcrow	More detail required in the methodology part of the procedure.
Connected Properties	Halcrow	Minor amendments required to the procedure.
Sludge Production	Halcrow	The procedure for the sludge reporting lines requires further details to explain the data production process.
Length of Mains	Halcrow	No material issues.
Length of Sewers	Halcrow	No material issues.
Outputs-Water	Halcrow	The reporting of mains activity delivered through Parcel arrangements with current methodology has led to requirements to restate mains activities.
Sludge Transport	AWS	Minor amendments required for the procedure.
Discharges and Consents	AWS	No material issues.
Treated Water	AWS	No material issues.
Water Service Facilities	AWS	Minor amendments required for the procedure.

Year-end audit programme

Topic	Auditor	Material findings
Single Supply	Halcrow	No material issues.
Flooding	Halcrow	Currently extrapolation methods used will not be suitable for AMP7 reporting, the current approach is considered appropriate but will be revised for AMP7. The vulnerability grading stage has not been completed as in the methodology.
Bathing Water	Halcrow	No material issues.
Pollution	Halcrow	Recommendations for the future to combine the procedures into one single document.
Water Pressure	Halcrow	No material issues.
Water Quality Contacts	Halcrow	No material issues,
Interruption to Supply	Halcrow	No material issues.
Water Balance and Leakage	Halcrow	An update to the SODCON night use model where appropriate to fit in with consistency reporting and reflect changes in night use patterns as captured in SODCON sample use patterns.
SIM	Halcrow	Hartlepool Water could provide evidence of their internal checks as part of the return to Anglian Water for the combined ANH score.
Outputs- Wastewater	Halcrow	No material issues.
Customer Satisfaction	Halcrow	No material issues.
Customer Perception	Halcrow	No material issues.
Water Quality Indicators	Halcrow	No material issues.
Security of Supply	Halcrow	To build on the demand forecast model, we suggest revising the distribution of dry year uplift to more accurately uplift household use and only commercial and industrial use if there is a realistic dry year increase in these demands. This allocation of increased use should follow the same principles as adopted in WRMP19 planning.
SSSI's	Halcrow	No material concerns.
Outputs Water	Halcrow	Reporting of mains activity delivered through parcel arrangement with current methodology has led to requirements to restate mains activities. Improved integration and reporting workflow for parcel delivered activities recommended for long term improvements.
Community Perception	Halcrow	Greater clarity could be provided on the treatment of the results of the two surveys to determine an overall results for the performance commitments if multiple surveys on varied subject matters continue to be used in the final year of the AMP.
Serviceability	Halcrow	The documentation provided to support the audit revealed some potential discrepancies between sources of penalty values assigned to the RAG status of sublines. The discrepancies are unlikely to be material based on the current year forecast performance and may be explainable by rounding or indexation processes
Burst Mains	Halcrow	Update the methodology with a robust process for obtaining the total length of mains. Develop the general methodology describing data sources, descriptions and governance which includes instruction for obtaining the total number of bursts.
Sewer Activity	Halcrow	Further training for field technicians to reinforce the need to accurately record time on site in order to alleviate ambiguities in job recording. This is within the confidence grade assigned and has no direct financial implications so is not considered a material concern. Blockages coded as 'blockage highway' are excluded because highway draining is not the responsibility of Anglian Water. However, some of these events were also coded as clearning fat, oil, and grease or non-flushables, which are not expected to be found in highway drainage. This could indicate that some sewers may be misidentified as highway drainage.
Wastewater Quality Indicators	Halcrow	Minor amendments required to update the procedure.
Unplanned Outage	Halcrow	Updates required for the methodology used to produce the data, which will be included in the procedure documents.

Priority Services Register	Halcrow	Amendments required to update the procedure.
Carbon	Lloyds Register	No material concerns

Independent Auditors' Report

Independent Auditors' report to the Water Services Regulation Authority (the WSRA) and the Directors of Anglian Water Services Limited

Report on the audit of the Regulatory Accounting Statements

Opinion

We have audited certain tables within Anglian Water Services Limited's ("the Company") Annual Performance Report for the year ended 31 March 2019 ("the Regulatory Accounting Statements") which comprise:

- the regulatory financial reporting tables comprising the income statement (table 1A), the statement of comprehensive income (table 1B), the statement of financial position (table 1C), the statement of cash flows (table 1D),the net debt analysis (table 1E)) and the related notes; and
- the regulatory price review and other segmental reporting tables comprising the segmental income statement (table 2A), the totex analysis for wholesale (table 2B), the operating cost analysis for retail (table 2C), the historical cost analysis of fixed assets for wholesale and retail (table 2D), the analysis of capital contributions and land sales for wholesale (table 2E), the household revenues by customer type (table 2F), the non-household water revenues by customer type (table 2G), the non-household wastewater revenues by customer type (table 2H) and the revenue analysis by customer type (table 2I), the infrastructure network reinforcement (table 2J), the infrastructure charges reconciliation (table 2K) and the related notes; and
- the Wholsesale Totex Analysis – Water (table 4D excluding section E), the Wholesale Totex Analysis – Wastewater (table 4E excluding section D), the Operating Cost Analysis – Household Retail (table 4F), the Financial Metrics (table 4H excluding line 5 and section C), the Financial Derivatives (table 4I), the Atypical Expenditure – Wholesale Water (table 4J), the Atypical Expenditure – Wholesale Waste Water (Table 4K) and the related notes

We have not audited the the financial flows table (table 1F), outcome performance tables (tables 3A to 3D) and the additional regulatory information in tables 4A to 4C, 4G, 4L to 4W.

In our opinion, Anglian Water Services Limited's Regulatory Accounting Statements have been prepared, in all material aspects, in accordance with Condition F, the Regulatory Accounting Guidelines issued by the WSRA (RAG 1.08, RAG 2.07, RAG 3.11, RAG 4.08 and RAG 5.07) and the accounting policies (including the Company's published accounting methodology statement, as defined in RAG 3.11, appendix 2, and available on the Company website at https://www.anglianwater.co.uk/about-us/our-reports/) as set out in the notes to the Annual Performance Report.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) ("ISAs (UK)"), including ISA (UK) 800, and applicable law and having regard to the guidance contained in ICAEW Technical Release Tech 02/16 AAF 'Reporting to Regulators on Regulatory Accounts'.

Our responsibilities under ISAs (UK) are further described in the Auditors' responsibilities for the audit of the Regulatory Accounting Statements section of our report. We are independent of the Company in accordance with the ethical requirements that are relevant to our audit, including the Financial Reporting Council's (FRC's) Ethical Standard and we have fulfilled our ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Emphasis of matter – special purpose basis of preparation

We draw attention to the fact that the Regulatory Accounting Statements have been prepared in accordance with Condition F, the Regulatory Accounting Guidelines, the accounting policies (including the Company's published accounting methodology statement, as defined in RAG 3.11, appendix 2) set out in the statement of accounting policies and under the historical cost convention. The nature, form and content of the Regulatory Accounting statements are determined by the WSRA. It is not appropriate for us to assess whether the nature of the information being reported upon is suitable or appropriate for the WSRA's purposes. Accordingly we make no such assessment. In addition, we are not required to assess whether the methods of cost allocation set out in the Methodology Statement are appropriate to the circumstances of the Company or whether they meet the requirements of the WSRA.

The Regulatory Accounting Statements are separate from the statutory financial statements of the Company and has not been prepared under the basis of International Financial Reporting Standards as adopted by the European Union ("IFRSs"). Financial information other than that prepared on the basis of IFRSs does not necessarily represent a true and fair view of the financial performance or financial position of a company as shown in statutory financial statements prepared in accordance with the Companies Act 2006.

The Regulatory Accounting Statements have been drawn up in accordance with Regulatory Accounting Guidelines with a number of departures from IFRSs. A summary of the effect of these departures from Generally Accepted Accounting Practice in the Company's statutory financial statements is included in the tables within section 1.

The Regulatory Accounting Statements are prepared in accordance with a special purpose framework for the specific purpose as described in the Responsibilities for the Regulatory Accounting Statements section below. As a result, the Regulatory Accounting Statements may not be suitable for another purpose.

Our opinion is not modified in respect of this matter.

Conclusions relating to going concern

We have nothing to report in respect of the following matters in relation to which ISAs (UK) require us to report to you where:

- the directors' use of the going concern basis of accounting in the preparation of the Regulatory Accounting Statements is not appropriate; or
- the directors have not disclosed in the Regulatory Accounting Statements any identified material uncertainties that may cast significant doubt about the Company's ability to continue to adopt the going concern basis of accounting for a period of at least twelve months from the date when the Regulatory Accounting Statements are authorised for issue.

Other information

The other information comprises all of the information in the Annual Performance Report other than the Regulatory Accounting Statements and our auditors' report thereon. The directors are responsible for the other information. Our opinion on the Regulatory Accounting Statements does not cover the other information and, except to the extent otherwise explicitly stated in our report, we do not express any form of assurance conclusion thereon.

In connection with our audit of the Regulatory Accounting Statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the Regulatory Accounting Statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether there is a material misstatement of the Regulatory Accounting Statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement, we are required to report that fact.

We have nothing to report based on these responsibilities.

Responsibilities of the Directors

As explained more fully in the Statement of Directors' Responsibilities set out on page 22, the directors are responsible for the preparation of the Regulatory Accounting Statements in accordance with Condition F, the Regulatory Accounting Guidelines issued by the WSRA and the Company's accounting policies (including the Company's published accounting methodology statement, as defined in RAG 3.11, appendix 2).

The directors are also responsible for such internal control as they determine is necessary to enable the preparation of the Regulatory Accounting Statements that are free from material misstatement, whether due to fraud or error.

In preparing the Regulatory Accounting Statements the directors are responsible for assessing the Company's ability to continue as a going concern, disclosing as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the Company or to cease operations, or have no realistic alternative but to do so.

Auditors' responsibilities for the Audit of the Regulatory Accounting Statements

Our objectives are to obtain reasonable assurance about whether the Regulatory Accounting Statements are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these Regulatory Accounting Statements.

A further description of our responsibilities for the audit of the financial statements is located on the Financial Reporting Council's website at: www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditor's report.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Report on other legal and regulatory requirements

Opinion on other matters prescribed by Condition F

Under the terms of our contract we have assumed responsibility to provide those additional opinions required by Condition F in relation to the accounting records. In our opinion:

- proper accounting records have been kept by the appointee as required by paragraph 3 of Condition F; and
- the Regulatory Accounting Statements are in agreement with the accounting records and returns retained for the purpose of preparing the Annual Performance Report.

Use of this report

This report is made, on terms that have been agreed, solely to the Company and the WSRA in order to meet the requirements of Condition F of the Instrument of Appointment granted by the Secretary of State for the Environment to the Company as a water and sewage undertaker under the Water Industry Act 1991 ("Condition F"). Our audit work has been undertaken so that we might state to the Company and the WSRA those matters that we have agreed to state to them in our report, in order (a) to assist the Company to meet its obligation under Condition F to procure such a report and (b) to facilitate the carrying out by the WSRA of its regulatory functions, and for no other purpose. To the fullest extent

permitted by law, we do not accept or assume responsibility to anyone other than the Company and the WSRA, for our audit work, for this report or for the opinions we have formed.

Our opinion on the Regulatory Accounting Statements is separate from our opinion on the statutory financial statements of the Company for the year ended 31 March 2019 on which we reported on 29 May 2019, which are prepared for a different purpose. Our audit report in relation to the statutory financial statements of the Company (our "Statutory audit") was made solely to the Company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our Statutory audit work was undertaken so that we might state to the Company's members those matters we are required to state to them in a statutory audit report and for no other purpose. In these circumstances, to the fullest extent permitted by law, we do not accept or assume responsibility for any other purpose or to any other person to whom our Statutory audit report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing.

Deloitte LLP

Statutory Auditors

London, United Kingdom

8 July 2019

External Assurance Report

Technical Assurance Executive Summary

Terms of Reference and Assurance Approach

1 Anglian Water Services Limited ('Anglian Water') commissioned Halcrow Management Sciences Limited (a Jacobs company) to provide independent technical assurance for the Company on selected non-financial Ofwat data tables/lines which provide information for inclusion in the Annual Performance Report (APR), which is to be published in July 2019. The APR is a collection of data and commentary relating to Anglian Water's performance in defined areas, including the Outcome Delivery Incentives (ODIs).

2 Since the 2018 APR, Anglian Water has revisited its risk assessments for the ODIs and APR information. The purpose of the review was to ensure risks to the quality of information to be presented in Ofwat's APR data tables were fully assessed such that the appropriate level of internal and/or external assurance was applied. The review was undertaken by Anglian Water and we were briefed on the process as part of our assurance planning. The implication for this year's external assurance was that there was greater emphasis on APR data with less audit effort on data for the company's internal Yearbook where it doesn't feed into APR data.

3 Our audit took place in two phases. Phase 1 was a series of process audits in February 2019 to review the methodologies used to generate key metrics assessed as the highest risk. Phase 2 was a series of 23 data audits of information submitted in Ofwat's APR data tables which Anglian publishes in its Annual Performance Report. This included performance against the ODIs. Phase 2 was completed in May 2019.

4 The purpose of the year end audit was to provide assurance that the processes and systems of control for generating data included in the Company's Annual Performance Report are adequate and that the resulting data can therefore be reliably used for describing its performance and managing the business. Anglian Water issued Terms of Reference for the scope of our year-end audits which required us to:

- Review the company's methodologies and procedures for identifying, analysing and recording data and, on a sample basis, test the application of those methodologies and procedures
- Provide an opinion on the adequacy of the methodologies and procedures adopted by the company to provide reliable information
- Alert the company to any material areas of concern or weakness observed
- Review progress against issues raised in the last audit
- Review whether the APR procedures and any associated local procedures / work instructions are current, accurate and appropriate
- Review whether the APR procedures (copies to be supplied with this terms of reference) and any associated local procedures / work instructions are current, accurate and appropriate
- Check that data stated in the tables is supported by audit trails which are reliable, accurate and complete
- Check that suitable commentary is provided which explains performance
- Confirm that the confidence grades are appropriate and supported by evidence

- Confirm that changes from previous submissions have been adequately explained
- Seek understanding of the upstream processes which generate data and the controls in place for ensuring the reliability of those data and test where possible.

5 The technical assurance team comprised technical and operational specialists led by the Assurance Director. We used risk-based samples to trace data to source. Audits have been documented in Summary Audit Reports (SAR).

Audit Opinion and Conclusion

6 Based on sample checks, we are satisfied that for those Ofwat APR data lines and ODIs we were asked to examine, there are no material issues with the reported information. For some processes and ODIs we have recommended procedures are updated to fully document the process to compile the ODI information. We have made observations detailed in Key Findings (identified as 'Amber') which we recommend are addressed. In our SARs, we highlighted a number of non-material observations and recommendations for Anglian Water's consideration (identified as 'Blue'). These are either work in progress by Anglian Water or opportunities to improve processes and/or resulting data.

7 We noted several areas of good practice or improvements that have been made in the year following investments made by the Company.

8 We confirm the APR metrics provide a fair and reasonable account of Anglian Water's performance during 2018/19, as measured through the ODIs.Key Findings

Key Findings

9 We identified some issues to which we have alerted the Company at audit and included in our Summary Audit Reports we have provided to the company. Key items of note, including exemplary performance, are identified below. We did not identify other residual material risks or concerns, about which the Company is not already aware.

10 Audit RAG Key:

No concerns	Minor concerns	Material concerns	Non-material observation or recommendation

APR data table / ODI	ANH risk rating	Audit RAG	Summary findings by exception and/or good performance
4P, 3S, Leakage	Critical		The leakage team has consistently improved aspects of tracking water use and leakage over AMP6 as the Company works towards its ODI target. We confirmed Anglian has met its leakage Performance Commitment of 192 Ml/d, reporting its three-year rolling average of 186 Ml/d. The Company's 'in-year' outturn for 2018/19 was confirmed as 191.2 Ml/d which is above its internal target of 177 Ml/d. We traced total numbers represented in the Water Balance one level back to confirm accuracy of the final figures. During 2018/19 significant work was progressed to verify actual use by non-household customers via a cross-check with the CMOS system that logs retailer-derived customer use information. The leakage team compared the data from their commercial loggers and conducted around 20,000 meter reads to confirm summer use patterns. This work provided increased confidence in retailer provided information and enabled greater accuracy for non-household use values. The long sustained peak demand during the 2018 dry weather was evident in night flows. Changes in night flows correlated with cooler weather and lower demand. These patterns were also supported with data from the unmeasured household monitor confirming the increases in Distribution Input were demand/usage related, not an increase in leakage. Based on the detailed evidence reviewed at audit, the analysis of increased demand during the summer heatwave and greater accuracy of non-household use is supportable. Anglian Water intends to further progress its work on non-household use.

APR data table / ODI	ANH risk rating	Audit RAG	Summary findings by exception and/or good performance
3A, 3B, 3S, Interruptions to Supply (I2S)	Med		We confirmed performance of 8 mins 44 secs per property, achieving the ODI target of 12 mins per property. Anglian Water's performance was influenced by two large events, although with the current processes and resources operating well Anglian may wish to consider verifying some events that are auto-verified in view of the likely tighter targets for AMP7.
3A, 3D, SIM	Med		Excellent (improved) performance in the SIM Qualitative score and the overall SIM score. Anglian Water's Qualitative score puts the Company in first position of the 10 WaSCs for the second year running.
4R, sewer blockages	Low		We found that some legitimate blockage events are being excluded from reporting due to the way that the methodology is being applied where jobs on site of less than five minutes are not counted. We also found that a small number of blockages were cleared in sewers that may be misidentified as highway drainage and therefore excluded. The potential for under-reporting is, as a very worst case, in the low hundreds. Even if the excluded numbers were included, the company's performance is still within the upper control limit.
3B, 3S mains bursts	Critical		We found some risks to accurate reporting for this ODI. Most significantly, the total length of mains on which this reported figure depends is not separately assured. There was also a gap in the written methodology as to how this information is communicated. In 2017/18 we recommended that burst events which, under the methodology are excluded from reporting because they had no customer impact should be logged, and investigated if the number began to rise. We found a significant increase in removals following investigation however the detail of the investigation hadn't always been recorded, and a similar increase in removals due to no customer impact. In response to our challenge Anglian Water added back customer impact removals where there was a reference to traffic management and updated its commentary to explain the removals.
3A, Security of Supply	High		The resilience of the inter-zonal transfer network helped Anglian Water achieve Security of Supply in a very challenging year with a prolonged dry spell that initiated a long duration peak demand, and became a new reference Dry Year.
3B, 4R, Sewer collapses	Critical		The methodologies are considered adequate to provide reliable information. The biggest risk area for these tables and lines is the reliance on the four Alliance partners to provide consistent and accurate data which forms the basis of these figures. Anglian Water has implemented measures to reduce the risk with improvements such as regular anomaly reports being sent to Alliance partners for investigation/correction. Our data sampling confirmed the risk is being mitigated through checks carried out monthly. We consider the residual uncertainty of some alliance-sourced information is unlikely to affect the conclusion that the outturn was within the upper control limit for this serviceability sub-measure.
3A, 4U, Designated bathing waters	Low		In 2018 an observation was made regarding changes to the EA's sampling regime for some low risk bathing waters and the impact that this could have on the risk AW faces to achieving the performance commitment level of 67% of bathing water classified as Excellent. The changes have not been identified as causing a different classification being reported for any of the 49 designated bathing waters.
Various data lines, risk rating varies			We have highlighted that a number of procedures and/or methodologies require updating to reflect current practice or to document governance and validation stages. We have identified these in our SARs as 'Blue' since the updates are not considered material to the resulting data.
3S, Consistency reporting	Critical		A number of metrics for AMP7 Consistency reporting (Table 3S) do not currently have a documented methodology. We recommend these are compiled as a priority with Consistency reporting being implemented in 2020/21.

Glossary

Annual Performance Report (APR) – report produced by the Company for regulatory reporting purposes, known previously as the Regulatory Accounts.

Appointed business – the appointed business comprises the regulated activities of the Company which are activities necessary in order for a company to fulfil the function and duties of a water and sewerage undertaker under the Water Industry Act 1991.

Arm's-length trading – arm's-length trading is where the Company treats the associate companies on the same basis as external third parties.

Asset Management Plan (AMP) – a plan agreed with Ofwat on a five-yearly basis for the management of water and wastewater assets. The plan runs for a five-year period. AMP5 covers April 2010 to March 2015 and AMP6 covers April 2015 to March 2020.

Associate company – Condition A of the Licence defines an associate company to be any group or related company. Condition F of the Licence requires all transactions between the Company and its associated companies to be disclosed subject to specified materiality considerations.

CEMARS (Certified Emissions Measurement and Reduction Scheme) - The CEMARS methodology for producing an organisational carbon footprint is aligned with the internationally recognised Greenhouse Gas Protocol for corporate accounting and reporting

CMOS (Central Market Operating System) CMOS is the core IT system which underpins MOSL's role in the water retail market. CMOS manages all the electronic transactions involved in switching customers and provides usage and settlement data that is used in the billing process.

Consumer Price Index including owner occupied housing costs (CPIH) - compiled and published monthly by the Office of National Statistics. This is an additional measure of consumer inflation including a measure of the owner occupied housing costs (costs that are associated with owning, maintaining and living in one's home) and council tax.

Final Determination (FD) – this is the conclusion of discussions on the scale and content of the Asset Management Plan for the forthcoming five-year period. It is accompanied by a determination of the allowable 'K' factor for the forthcoming five-year period.

K factor – the annual charge, set by Ofwat, in revenue that companies in the water industry can make. The amount by which a company can increase (or must decrease) its charges is controlled by the price limit formula RPI + or – 'K'. RPI is expressed as the percentage increase in the Retail Price Index in the year to November before the charging year. 'K' is a number determined by Ofwat for each company, usually at a price review, for each year to reflect what it needs above or below inflation in order to finance the provision of services to customers, and is subject to adjustment mechanisms to reflect prior year revenue recovery and in-period performance commitments.

Licence – the Instrument of Appointment dated August 1989 under Sections 11 and 14 of the Water Act 1989 (as in effect on 1 August 1989) under which the Secretary of State for the Environment appointed Anglian Water Services Limited as a water and sewerage undertaker under the Act for the areas described in the Instrument of Appointment, as modified or amended from time to time.

Menus – menu regulation is an innovative system in which companies are presented with a choice of regulatory contracts. Companies are rewarded or penalised based on how well their business plan matches expenditure during the subsequent price control.

MOSL (Market Operating Services Limited) MOSL is the not-for-profit company which operates the business water market which opened on 1 April 2017.

Non-appointed business – the non-appointed business activities of the Company are activities for which the Company as a water and sewerage undertaker is not a monopoly supplier (for example, the sale of laboratory services to an external organisation) or involves the optional use of an asset owned by the Company (for example, the use of underground assets for cable television).

Ofwat – the name used to refer to the Water Services Regulation Authority (WSRA). The WSRA acts as the economic regulator of the water industry.

Outcome Delivery Incentives (ODIs) – the rewards earned and penalties incurred by companies according to how well they perform against the Performance Commitment Levels.

Performance Commitment Level (PCL) – in consultation with Ofwat and our customers, we have set measurable targets for each ODI that represent the delivery of our outcomes.

Periodic Review – the price determination process undertaken by Ofwat every five years. Each water and sewerage undertaker submits an Asset Management Plan covering the five-year period for which Ofwat will determine prices (the 'K' factor – see above).

Price Control Units – at the 2014 price review, Ofwat introduced separate price controls for wholesale water, wholesale wastewater, retail household and retail non-household.

Regulatory Accounting Guidelines (RAGs) – the accounting guidelines for the APR issued, and amended from time to time, by Ofwat.

Regulatory Capital Value (RCV) – the capital base used in setting price limits and the value of the appointed business that earns a return on investment. It represents the initial market value (200-day average), including debt at privatisation, plus subsequent net new capital expenditure including new obligations imposed since 1989. The capital value is calculated using the Ofwat methodology.

Retail Price Index (RPI) – the RPI is compiled and published monthly by the Office for National Statistics. RPI is an average measure of change in the prices of goods and services bought for the purpose of consumption by the vast majority of households in the United Kingdom.

Retail services – the elements of the business responsible for direct contact with customers e.g. the contact centre, billing and reading meters. From April 2017, following the opening of the non-household market, business customers are able to choose their retail supplier. The appointed business exited all non-household market activities.

Section 24 Sewers - In England there is a category distinction between sewers built before or after 1937. Sewers dating from after 1937, and that only serve your own home albeit that the drain line crosses somebody else's land, are "private" or "lateral drains". On the other hand if your house was constructed before 1st October 1937 and your drains are shared, serving two or more homes, then that drain line is a "public" sewer (a "section 24 sewer").

Service Incentive Mechanism (SIM) – Ofwat's measure of customer satisfaction based on surveys of customers who have contacted the Company and the number of contacts received which express dissatisfaction.

Third-party contributions since 1989/90 – grants and third-party contributions received in respect of infrastructure assets and any deferred income relating to grants and third-party contributions for non-infrastructure assets.

Totex – total expenditure comprising operational expenditure (opex) and capital expenditure (capex).

Transferred private sewers - On 1 October 2011 all privately owned sewers and lateral drains which drained to existing public sewers as at 1 July 2011 became the responsibility of the sewerage undertaker. This covers foul, surface water or combined sewers, and any

drains serving individual properties, which are outside the curtilage of the property they serve, connect to the public sewerage system and were previously the responsibility of homeowners.

UKWIR (UK Water Industry Research) - the body which facilitates, manages and delivers a strategic programme of research projects for its members, the water companies of the UK and Ireland, to address the key challenges they face

Water and Sewerage Company (WaSC) – a company responsible for the provision of both water and sewerage services.

Water only company (WOC) - a company responsible for the provision of both water services only.

Water recycling - to promote public understanding of the water cycle and encourage stakeholders to value water appropriately, we use this term to describe our waste water or sewerage service.

Water Recycling Centre (WRC) - we use this term, rather than sewage treatment works, to describe the facilities which return used water to a condition where it can safely be discharged to environmental waters

Wholesale services – the elements of the business responsible for the abstraction, treatment and distribution of water and the collection, treatment and disposal of sewage and sludge.

Working capital – the aggregate of stocks, trade debtors and trade creditors.

WRFIM – Wholesale revenue forecasting incentive mechanism.